

## GAMMA-RAY

COMPANY : KERR MCGEE OIL & GAS ONSHORE LP  
WELL : WILSON RANCH #33C-27HZ  
FIELD : WATTENBERG  
COUNTY : WELD  
STATE : CO  
COUNTRY : USA  
API No.: 05-123-41052

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STATE : CO  
COUNTRY : USA  
WELL No. : 05-123-41052

## WELL LOCATION

LAT:40°16'51"N LON:104°57'43"W  
X:1,651,024 Y:14,628,350 UTM13  
SEC:26 TWP:4N RAN:

## OTHER SERVICES

DIRECTIONAL  
ROP  
PRESSURE

DEPTH REF. :	ROTARY TABLE
ELEVATION :	20.00 ft (ROTARY TABLE - GROUND LEVEL)
ALTITUDE :	5072.00 ft (GROUND LEVEL - MEAN SEA LEVEL)

## BOREHOLE RECORD

HOLE SIZE	in	FROM	ft	TO	ft	INCLINATION	deg	FROM	ft	TO	ft
12 1/4		0		1867		00 - 09		0		6868	
8 1/2		1867		17004		09 - 90		6868		7902	
						90 +/- 3		7902		17004	

## DEVIATION RECORD

[illegible]

## CASING RECORD

CASING SIZE in	FROM ft	TO ft			
9 5/8	0	1857			

DRILLING CO. : PRECISION DRILLING

RIG : 460

LWD UNIT NO.: TRAILER DISTRICT : COMMERCE CTY

SPUD DATE : 12-OCT-15

LWD START DATE : 24-OCT-15 DEPTH : 1867 ft

LWD END DATE : 02-NOV-15 DEPTH : 17004 fth

TOTAL DEPTH : 17004 ft

## REMARKS

KERR MCGEE OIL & GAS ONSHORE LP AFE #: 2097556

SCHLUMBERGER JOB #: 15CC00832

ALL LOGGING DATA IS MEMORY UNLESS STATED OTHERWISE.

ALL REFERENCES TO LOG TOP, LOG BOTTOM, OR LOGGING TOOL DEPTH REFER TO THE GAMMA-RAY SENSOR UNLESS STATED

OTHERWISE. SENSOR OFFSETS FOR THE OTHER LOGGING TOOLS ARE SHOWN IN THE BHA REPORT ON THE LOG TRAILER.

ALL ANNOTATIONS IN THE DEPTH TRACK ARE REFERENCED TO BIT DEPTH.

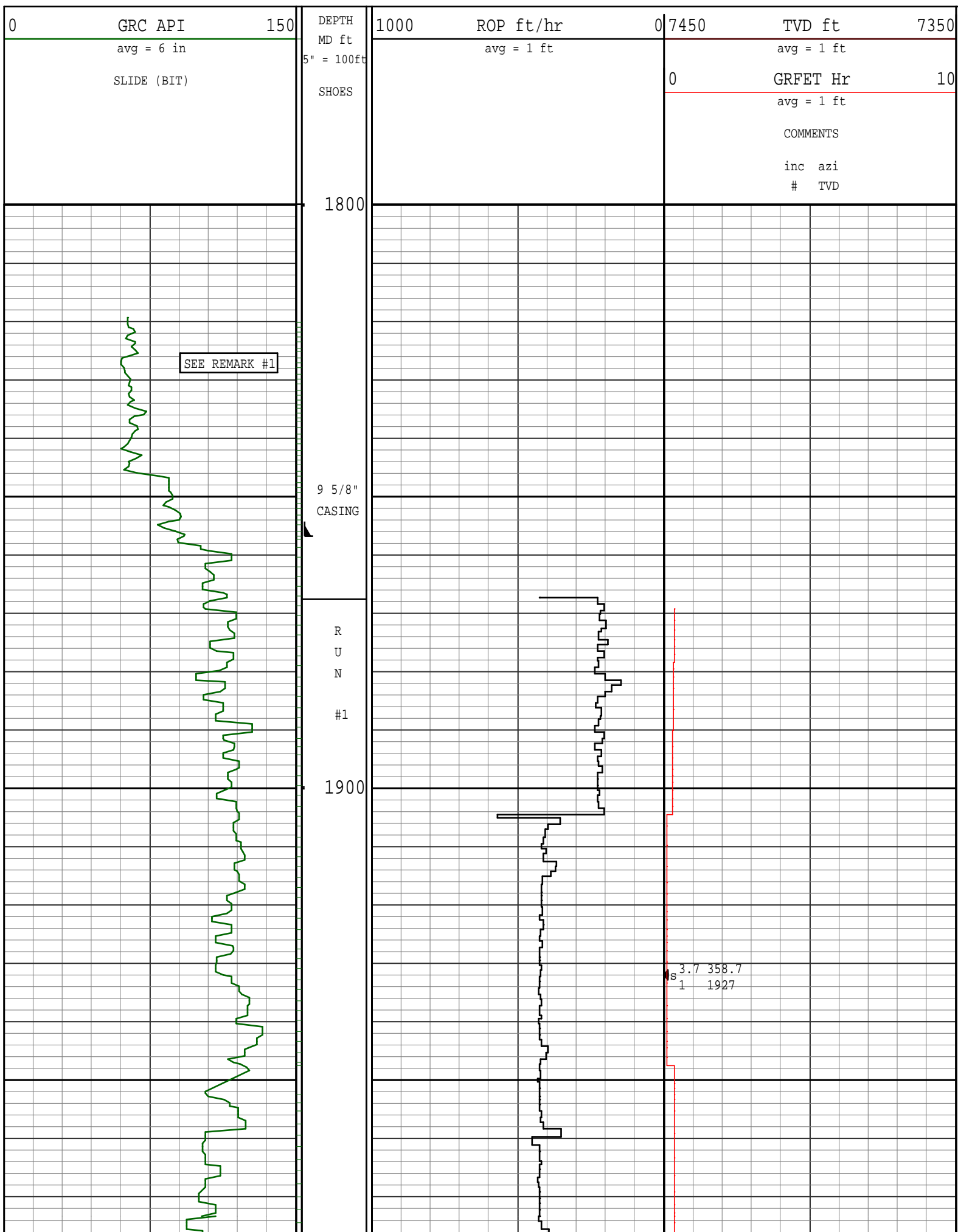
THIRD PARTY DEPTH TRACKING SERVICES PROVIDED BY PASON.

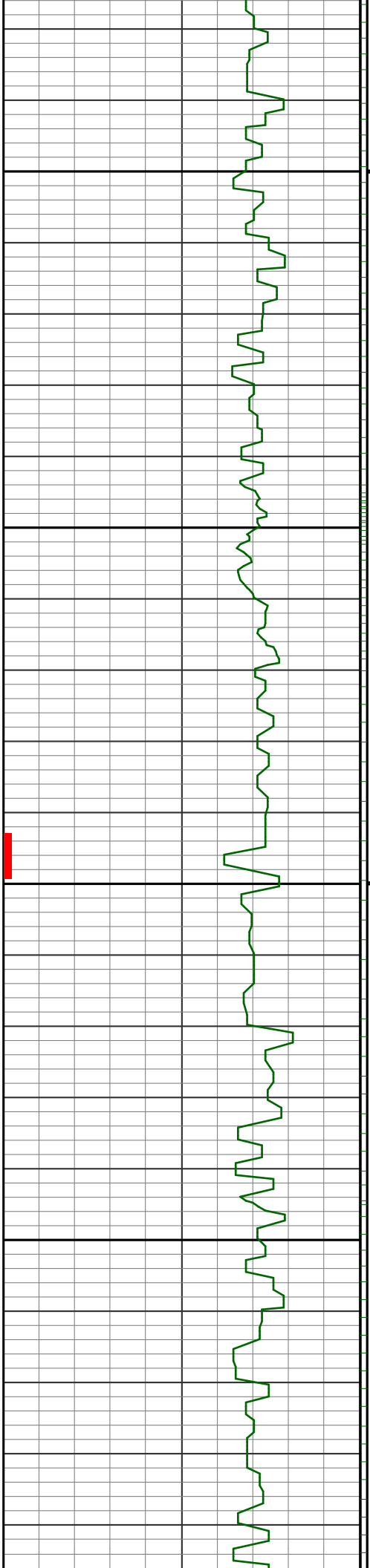
RUN #1 6 3/4" TELEPACER/GAMMA/DPM LOGGING RUN.

REMARK #1: GAMMA-RAY LOGGED THROUGH CASING FROM 1820'-1857'MD (1815'-1852'TVD).

REMARK #2: ROP FROM 16957'-16989'MD (7417'TVD) IS UNAVAILABLE DUE TO THIRD PARTY DEPTH TRACKING ERROR.

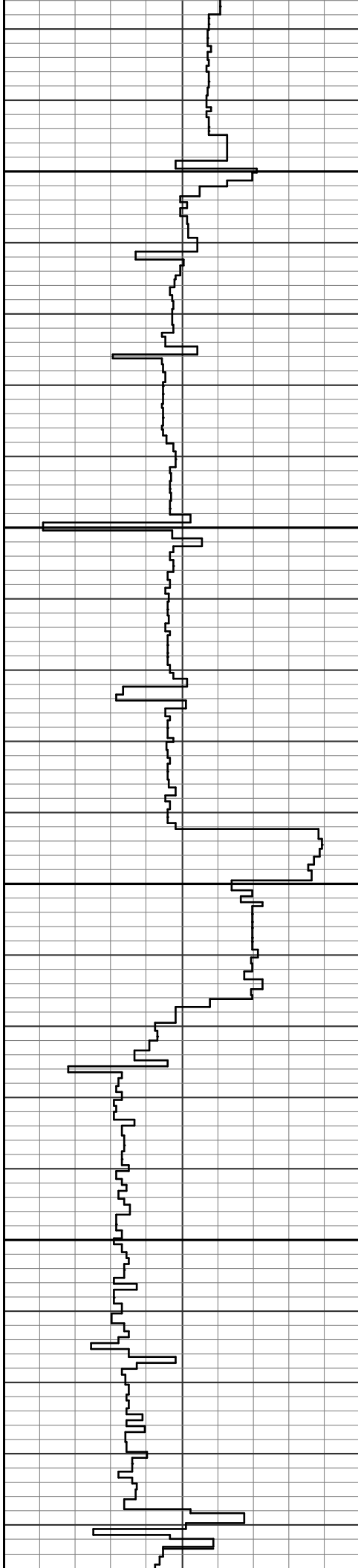
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA





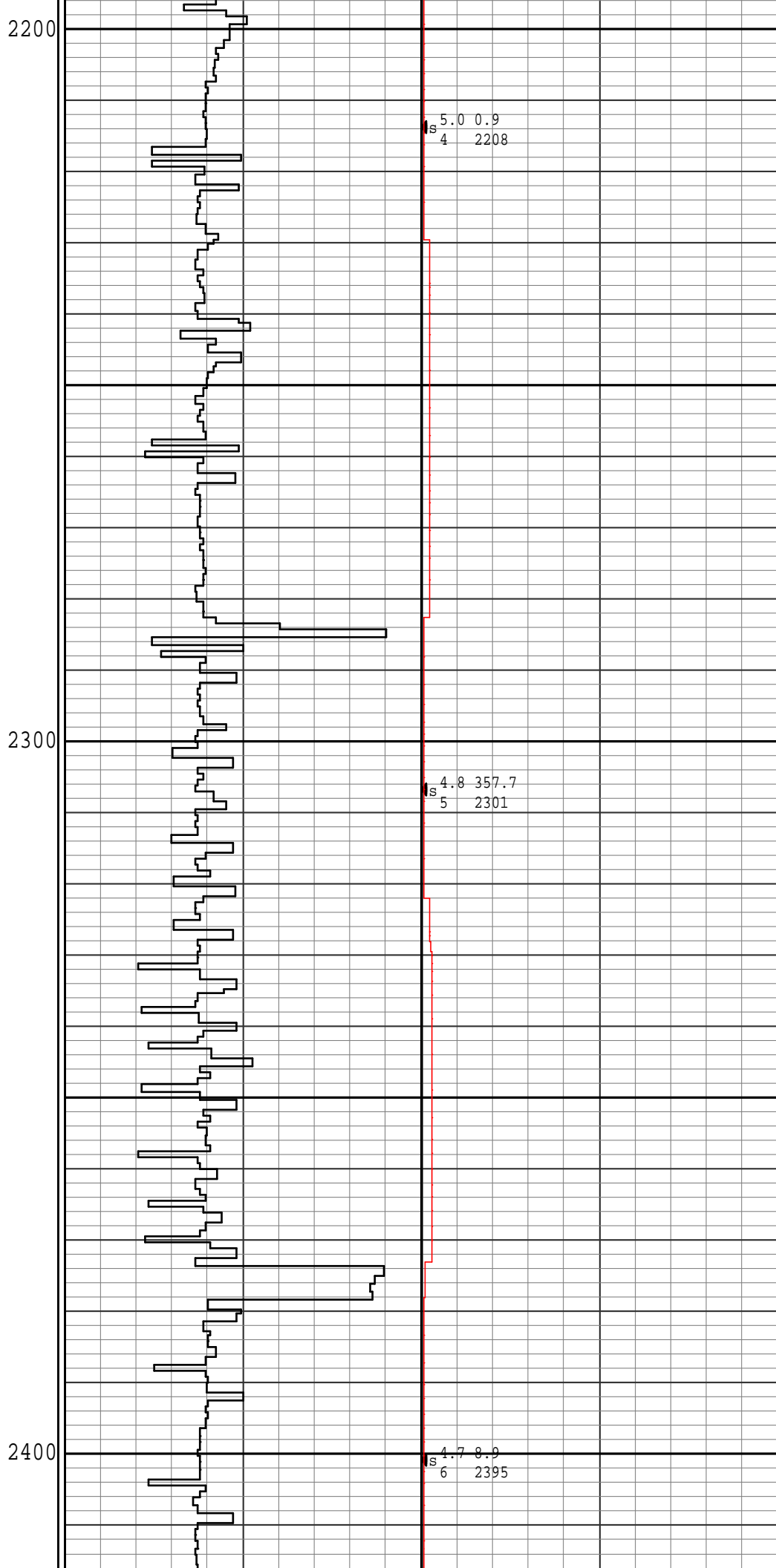
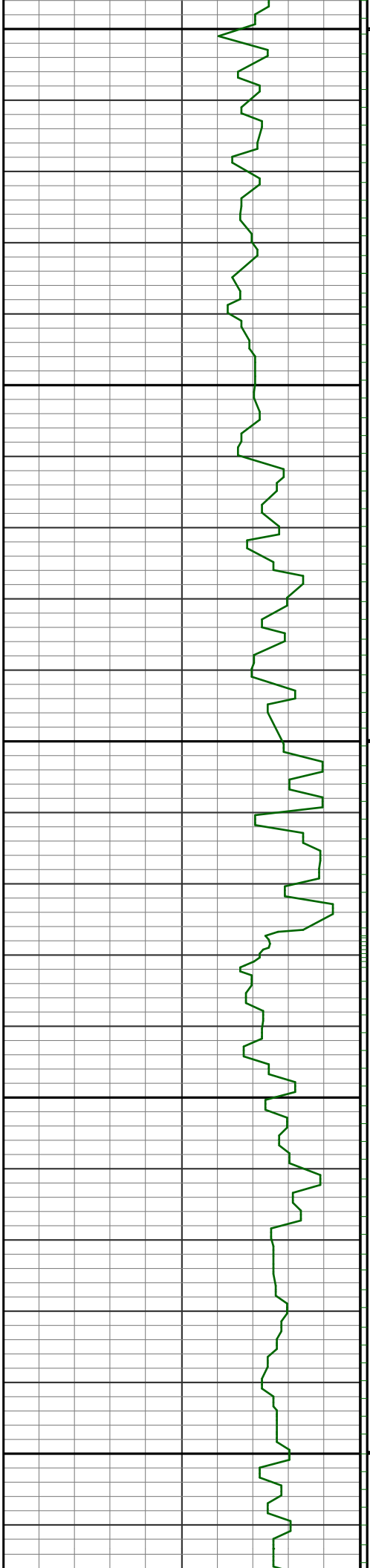
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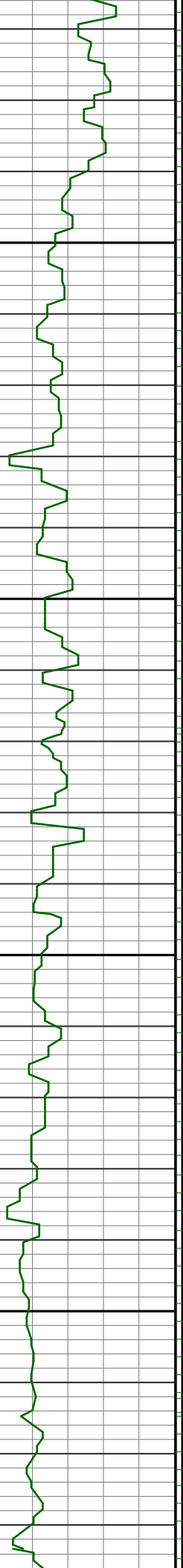
2100



3.5 355.2  
2 2021

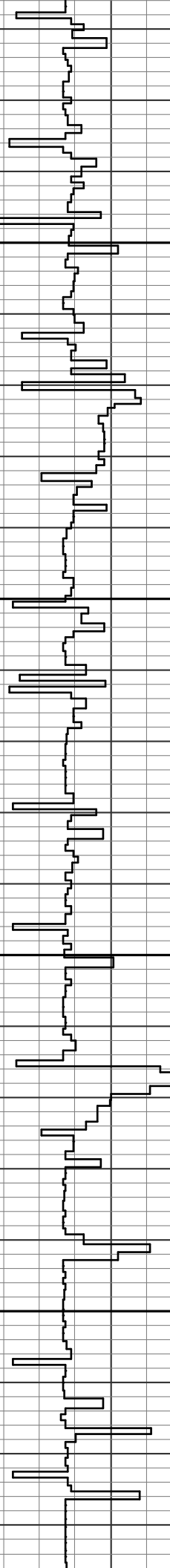
4.8 8.9  
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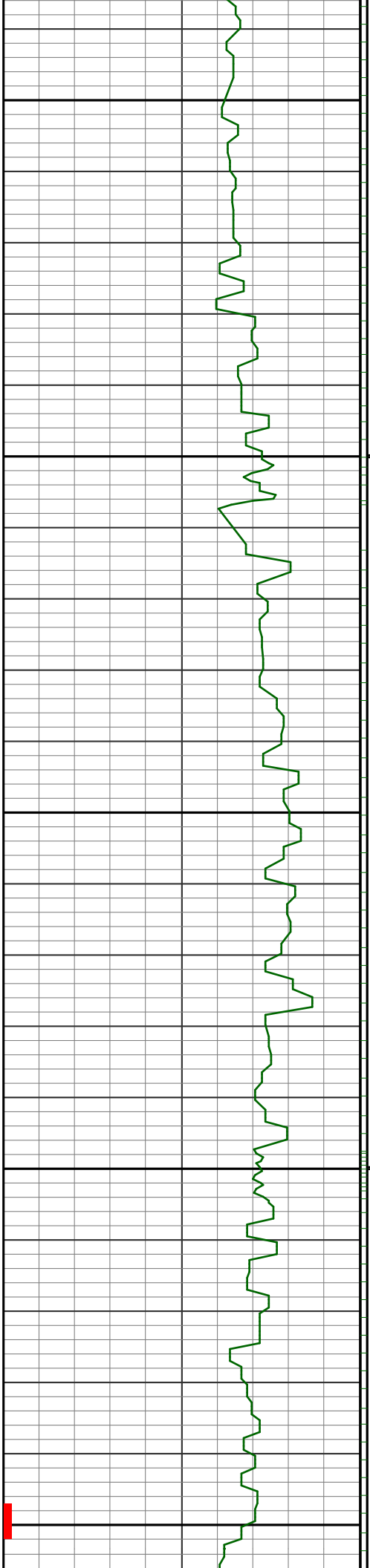
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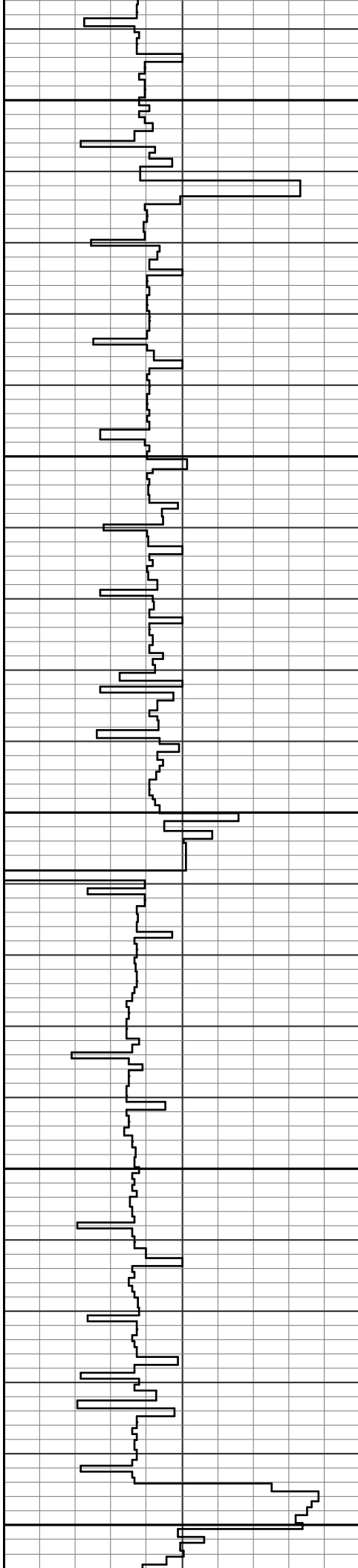
4.7 6.6  
s 7 2488

5.0 5.4  
s 8 2581



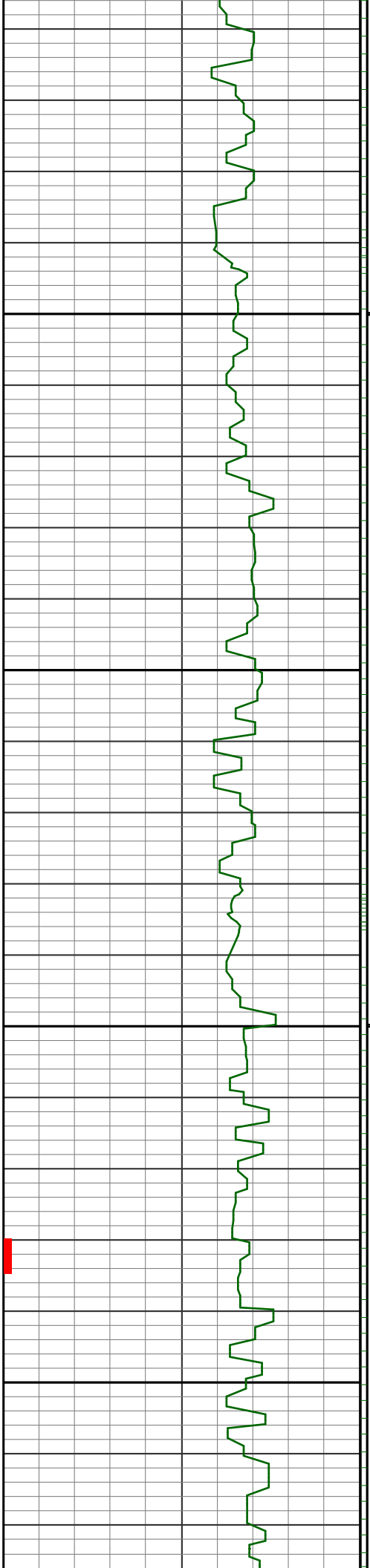
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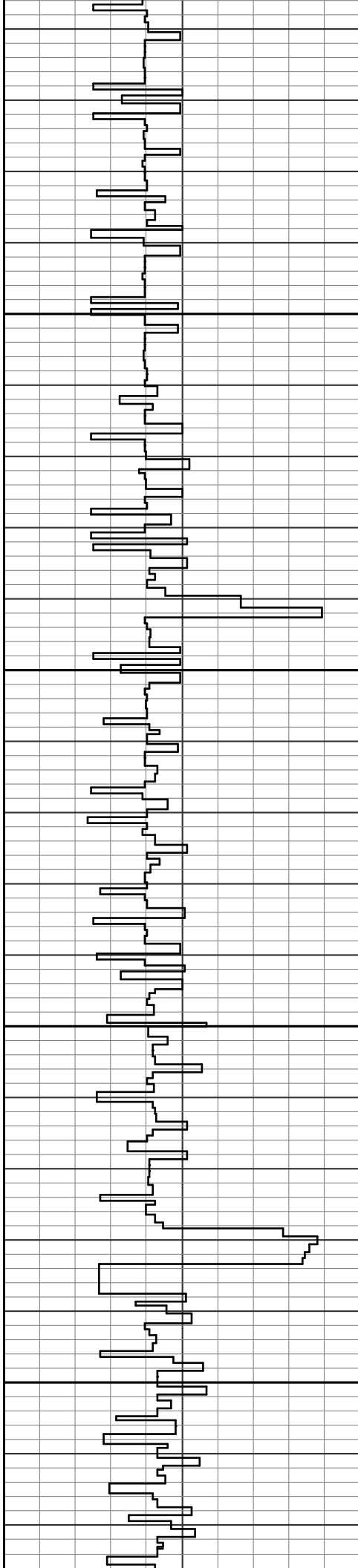
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5.1 3.5  
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2900

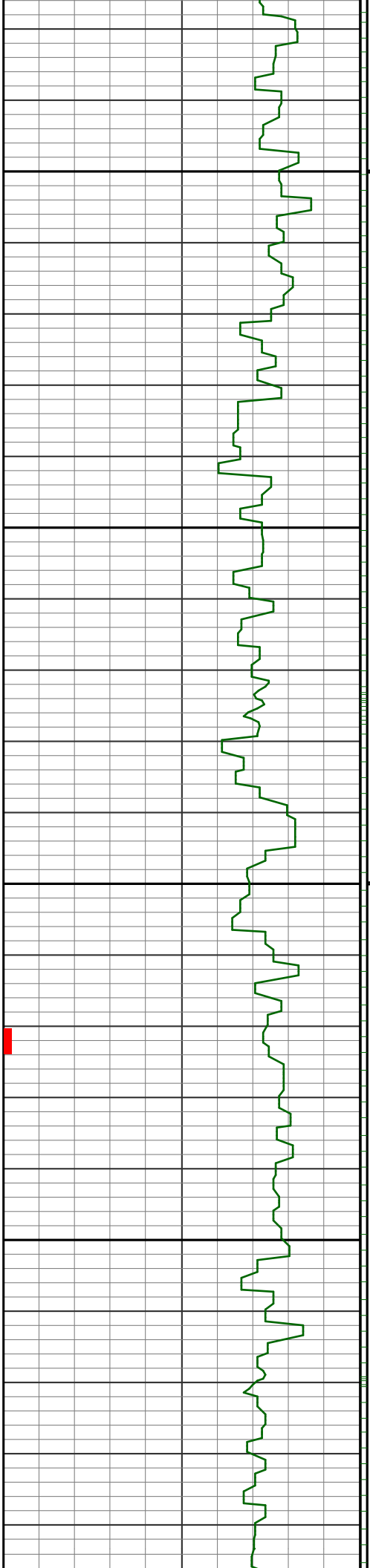
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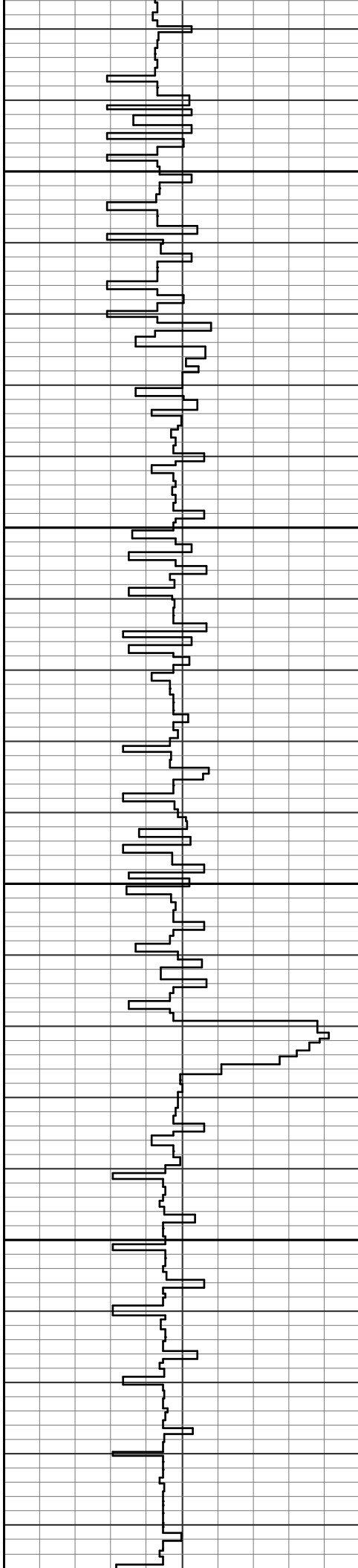
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S 4.1 17.4  
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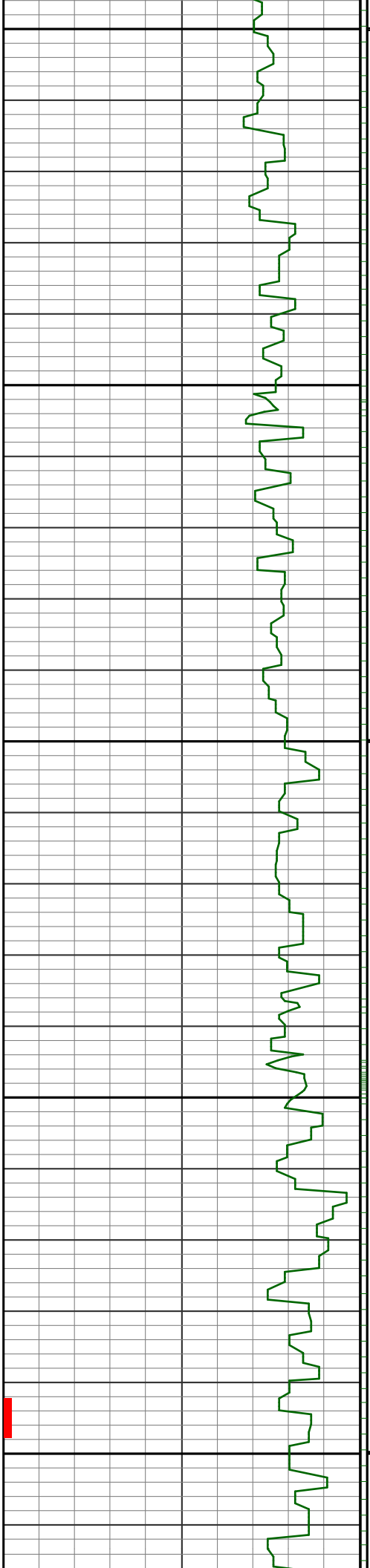
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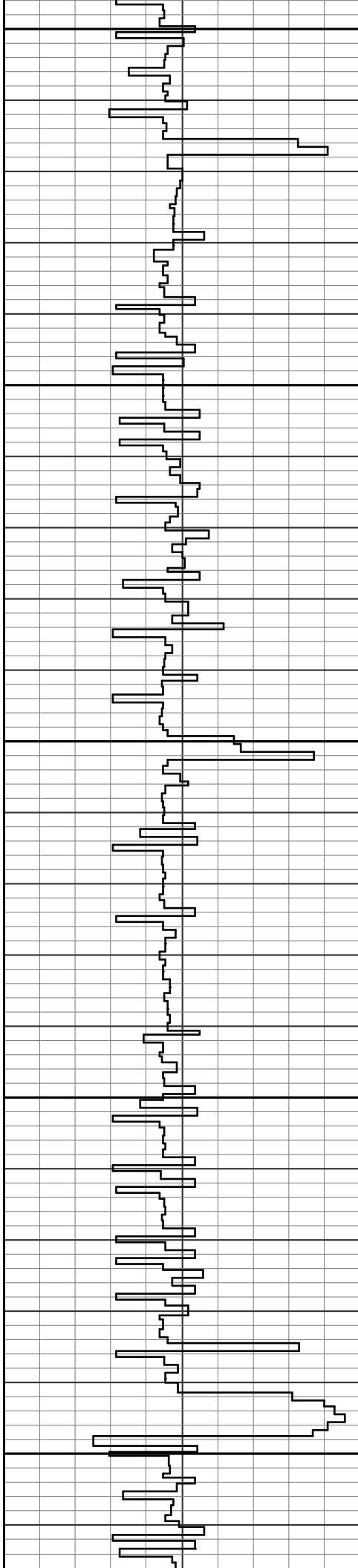




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3400

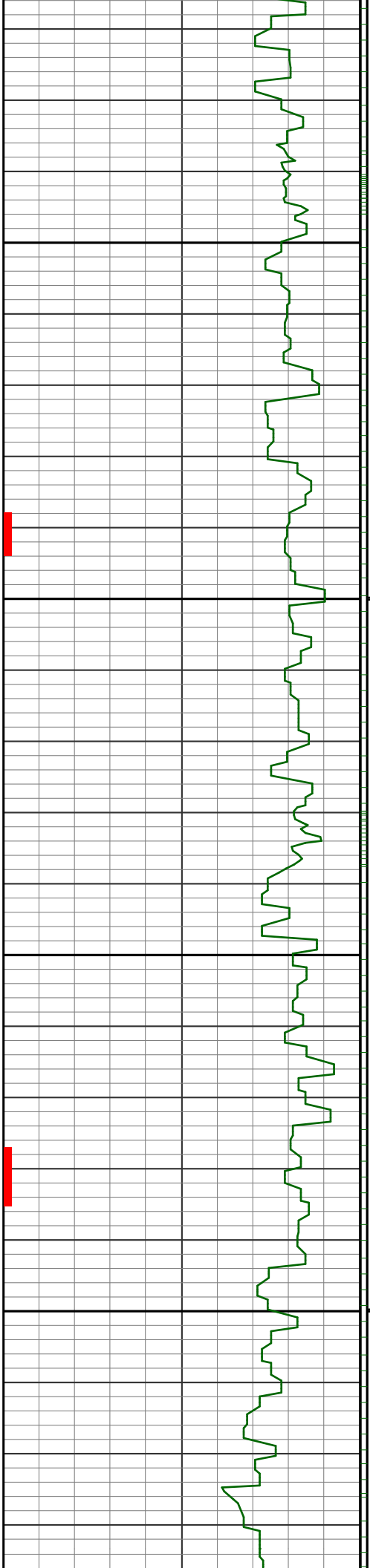
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4.9 20.9  
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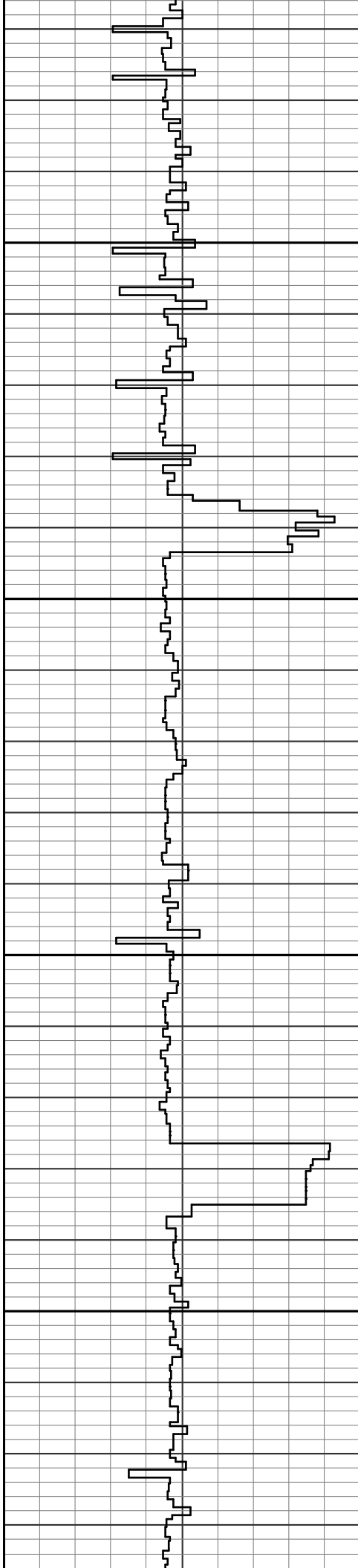
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4.4 15.9



3600

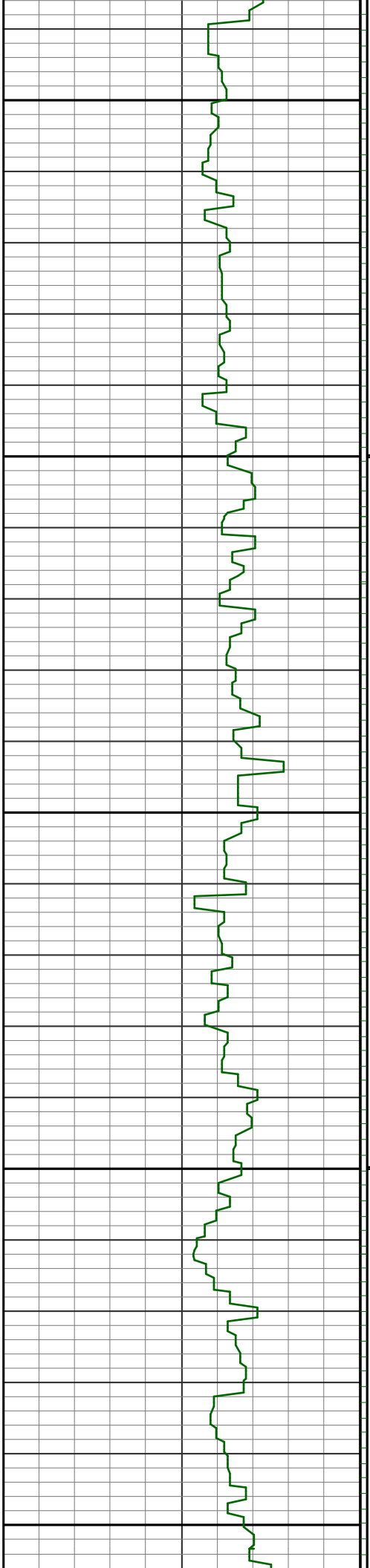
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14.4 15.9  
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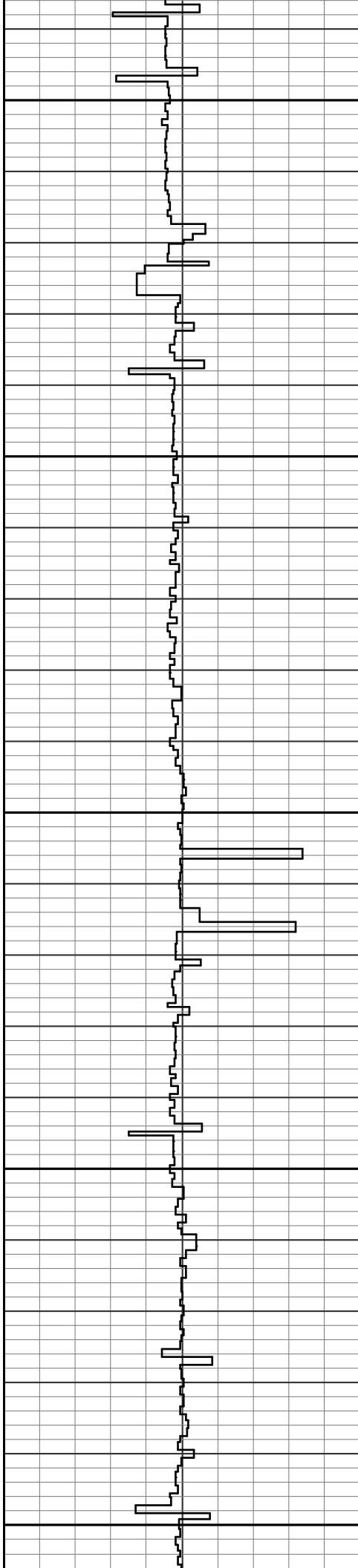
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5.8 24.3  
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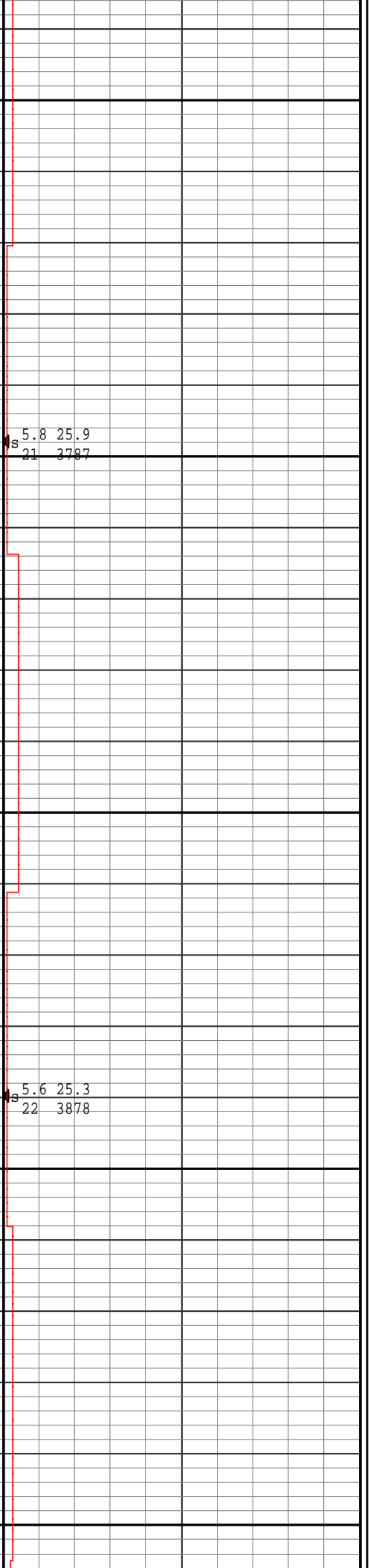
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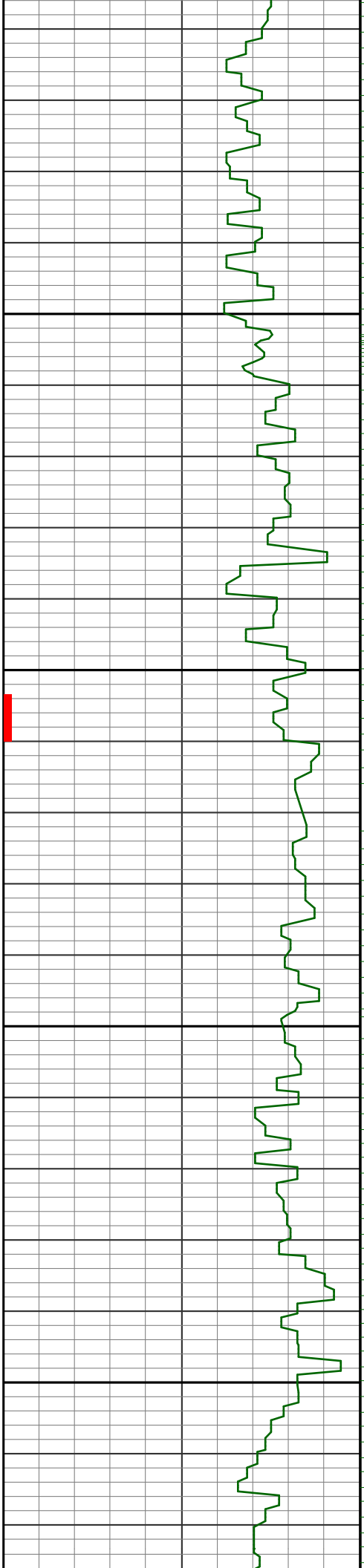
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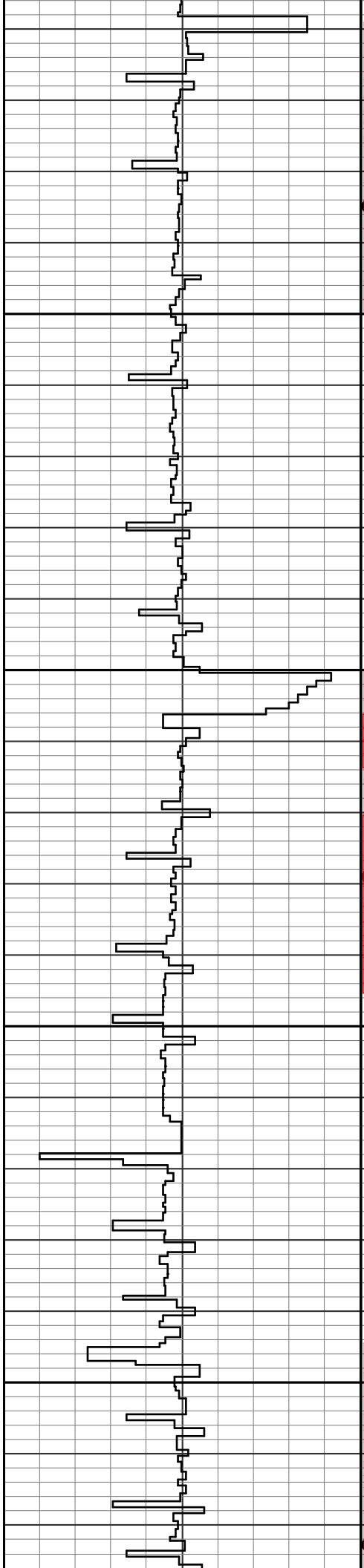
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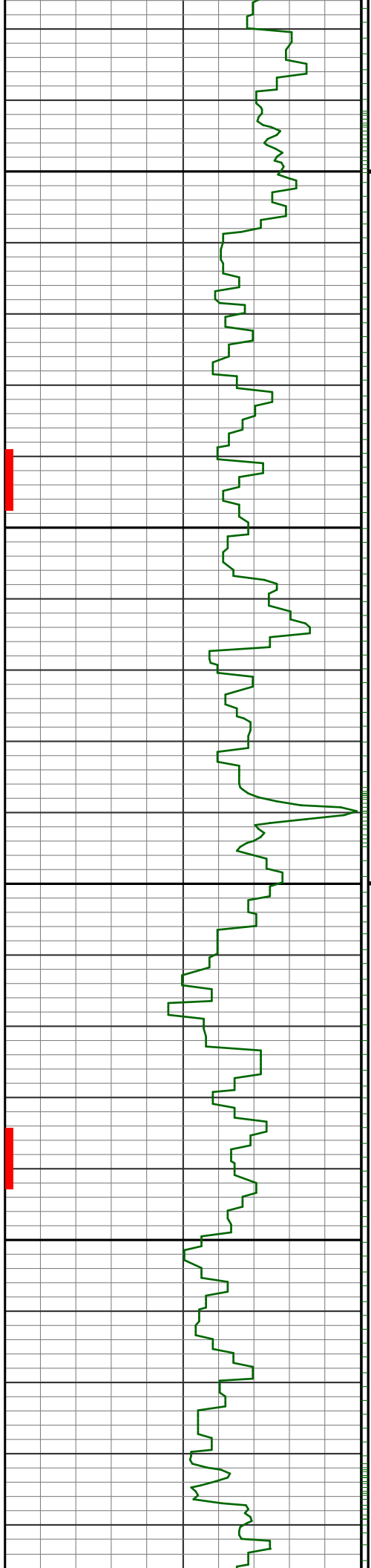
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S 5.4 26.4  
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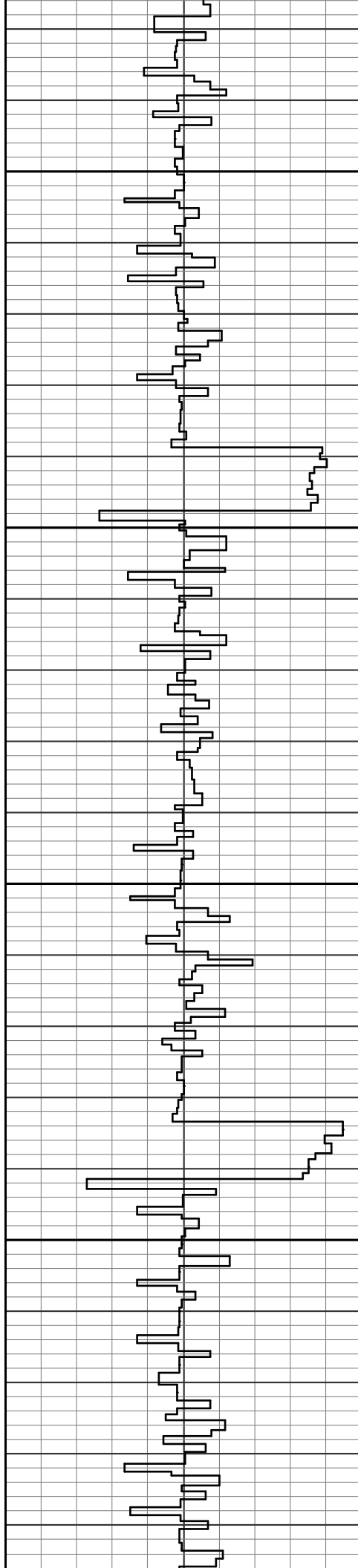
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S 3.7 8.5  
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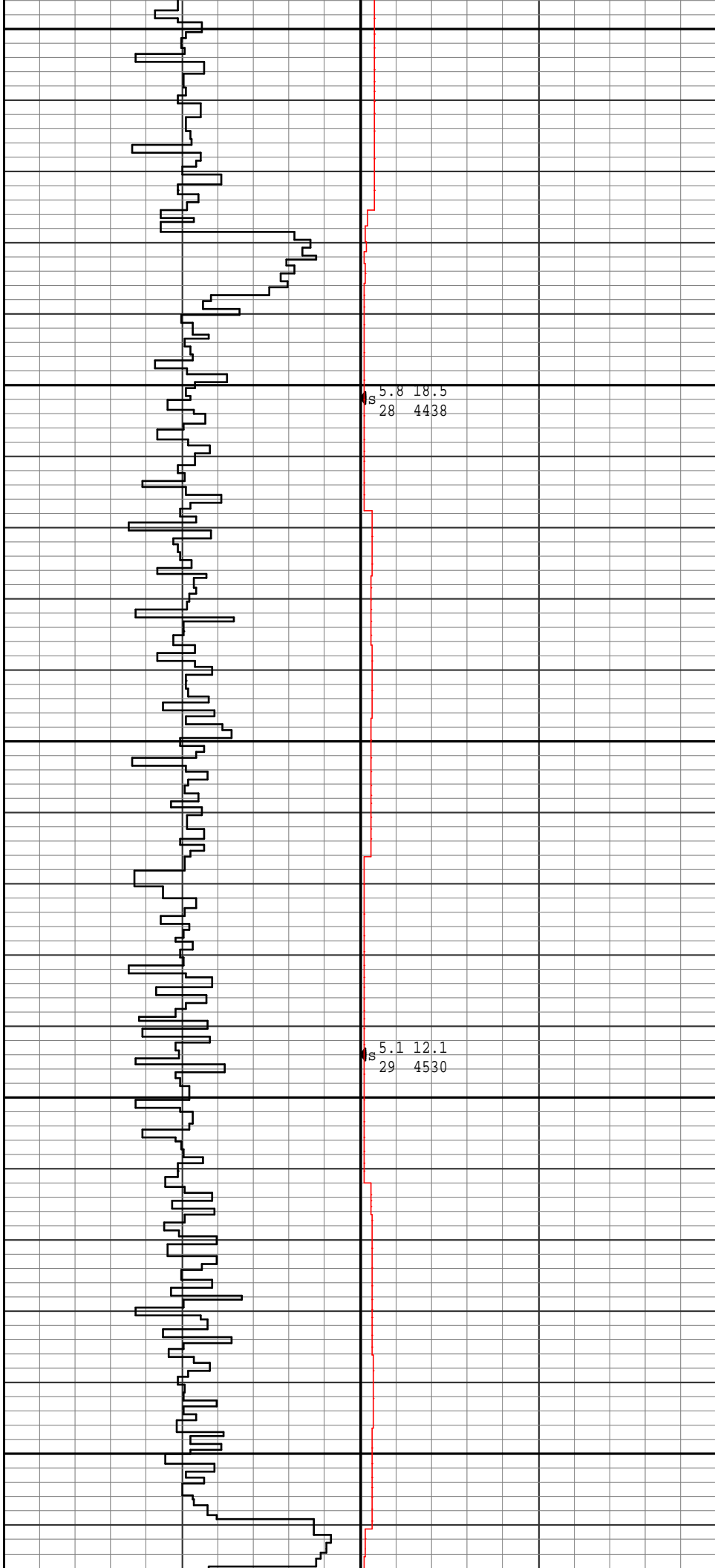
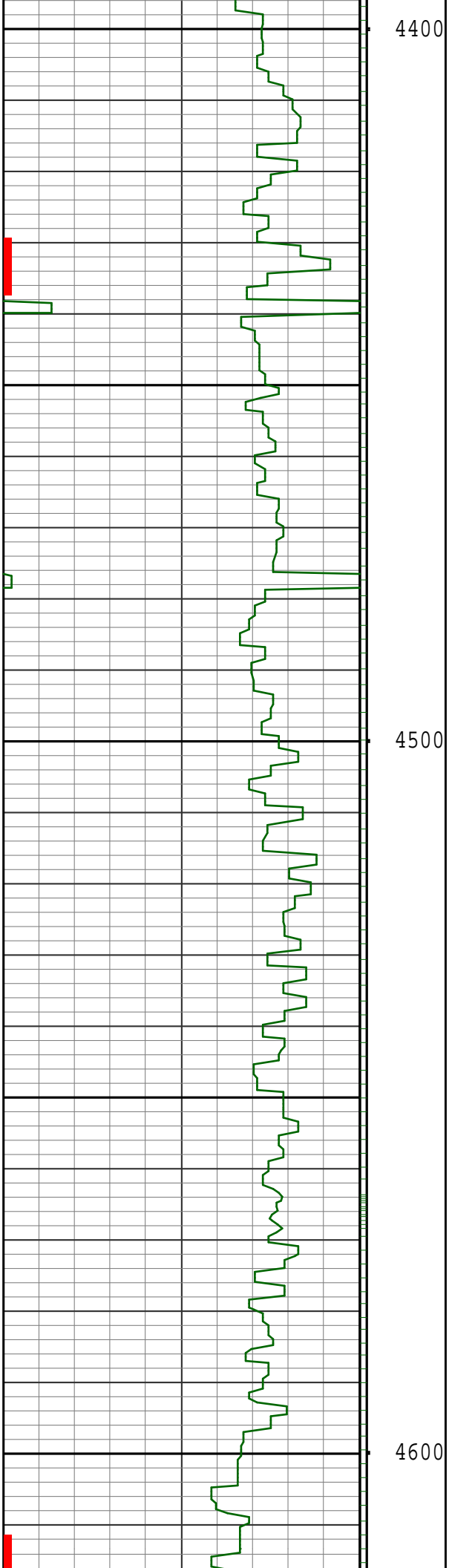
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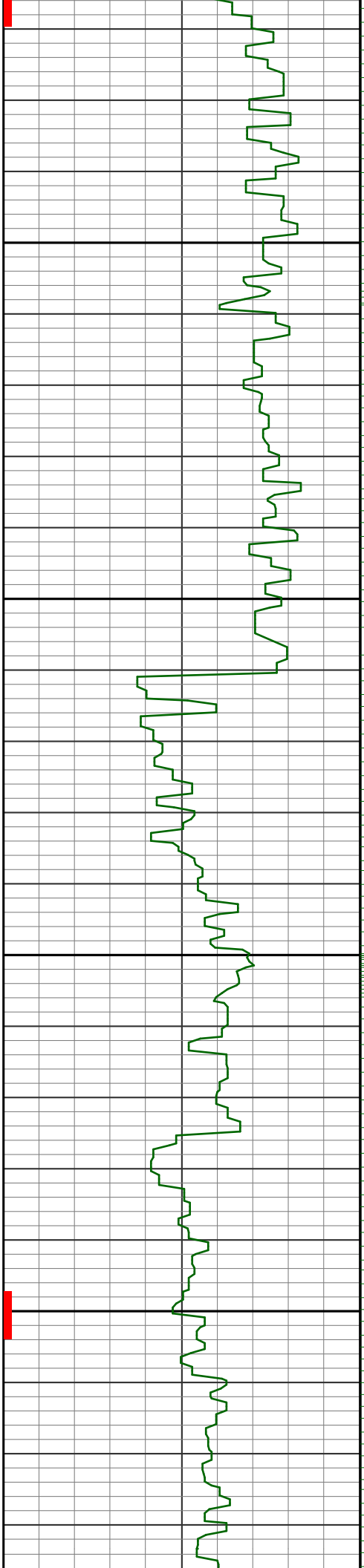
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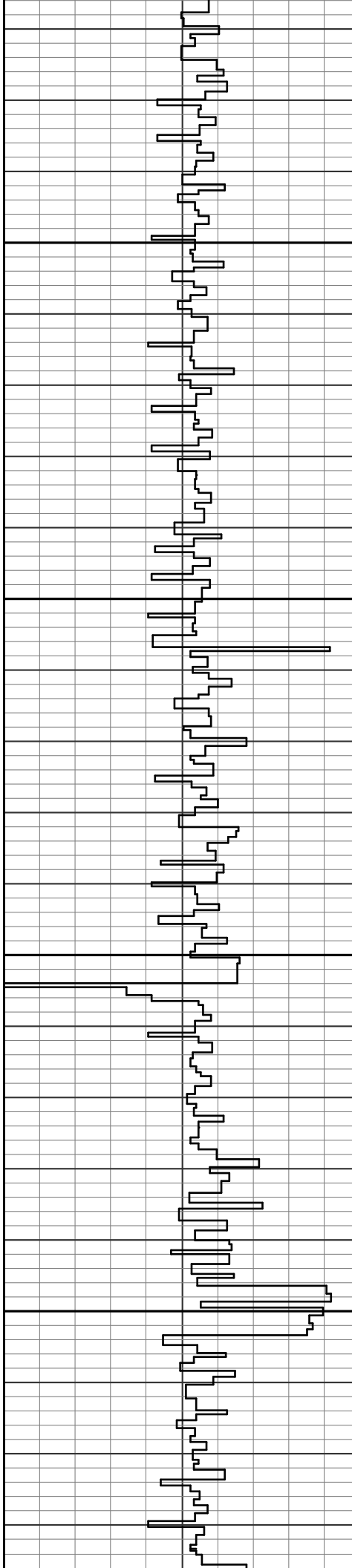
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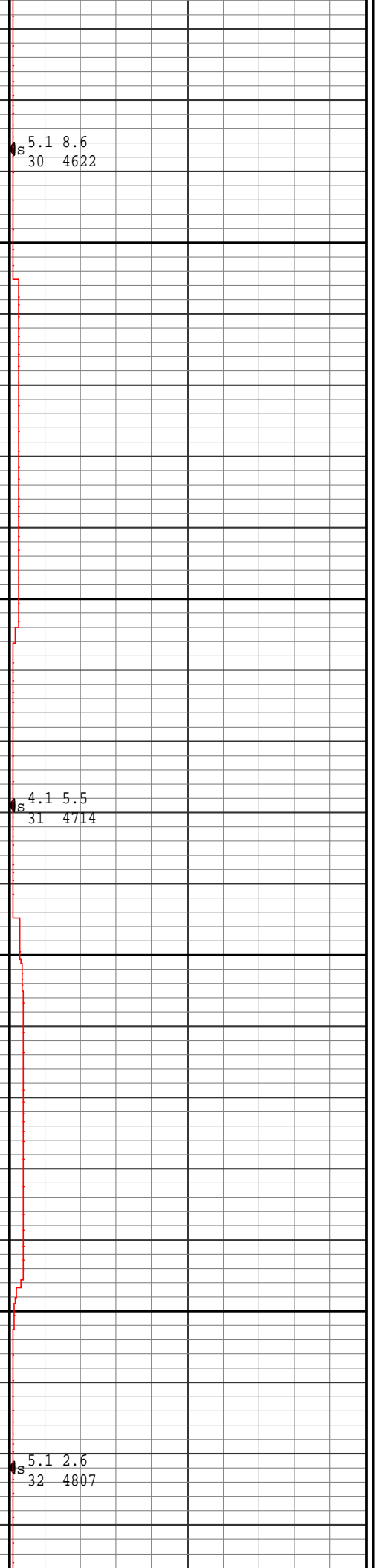
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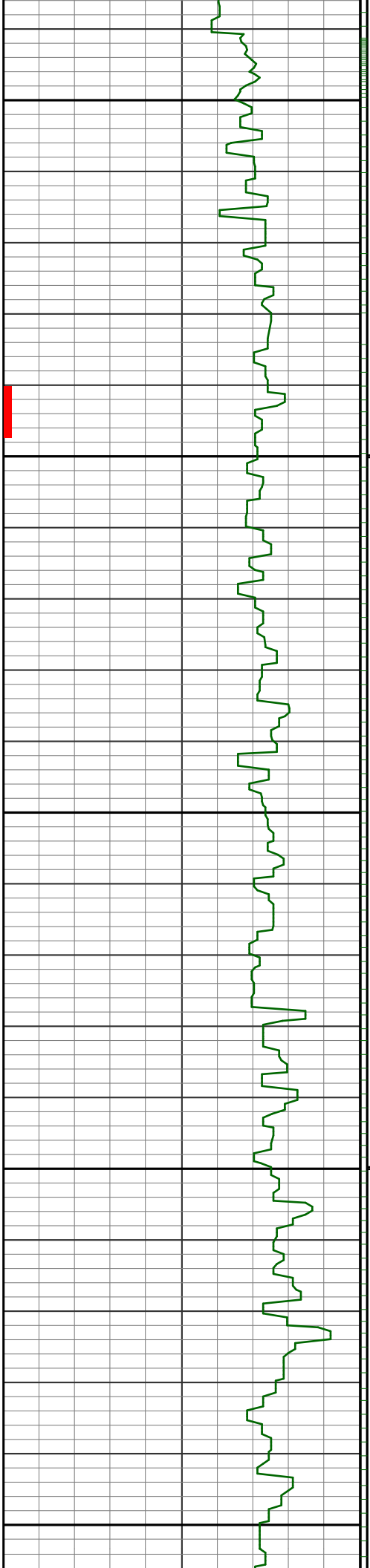


5.1 8.6  
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4.1 5.5  
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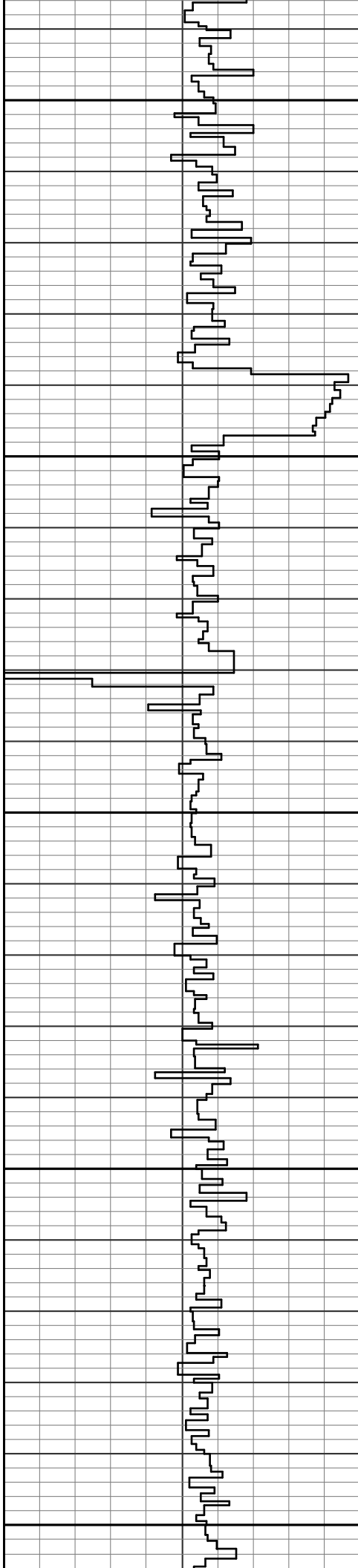
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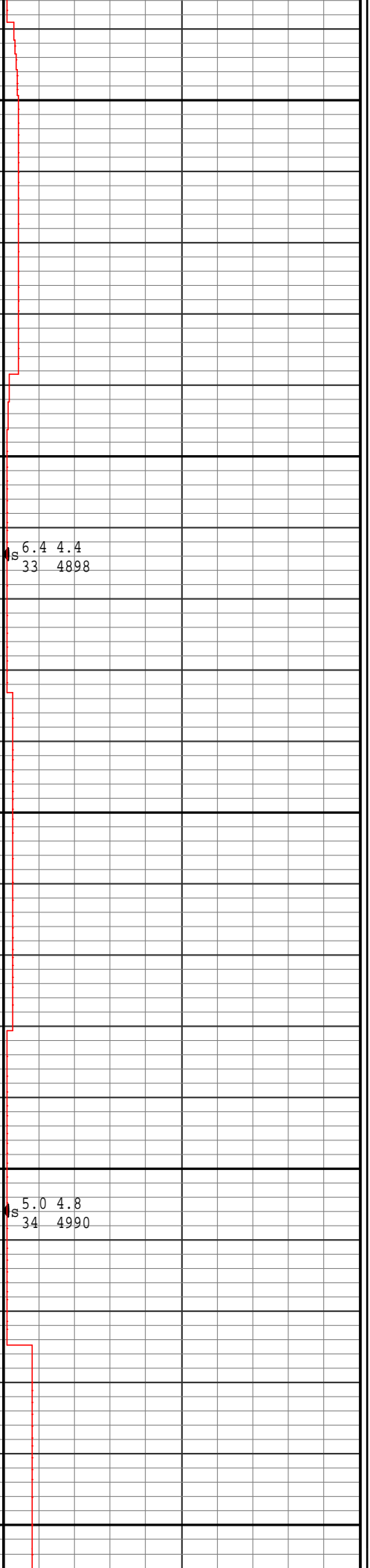
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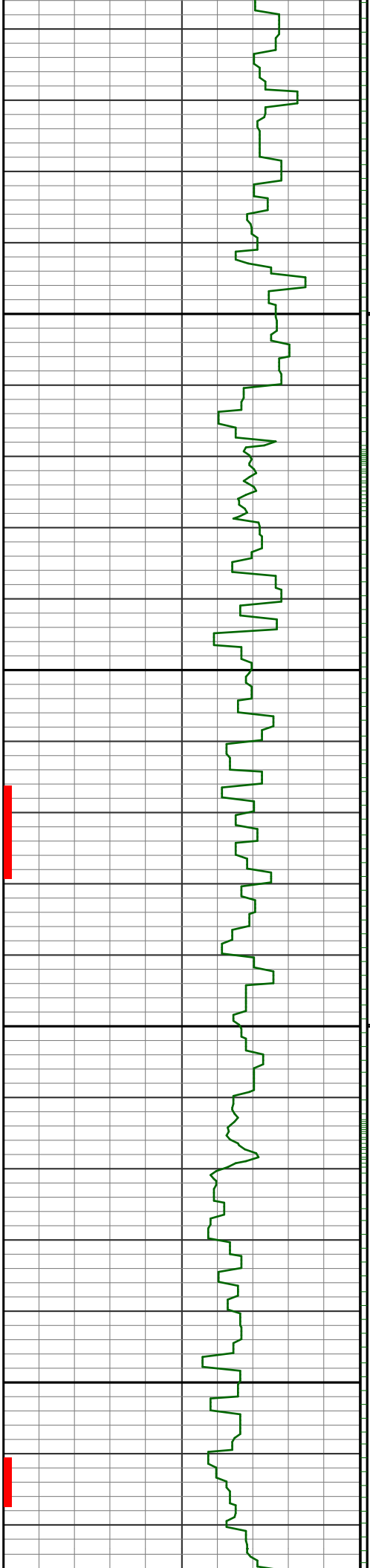


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S 5.0 4.8  
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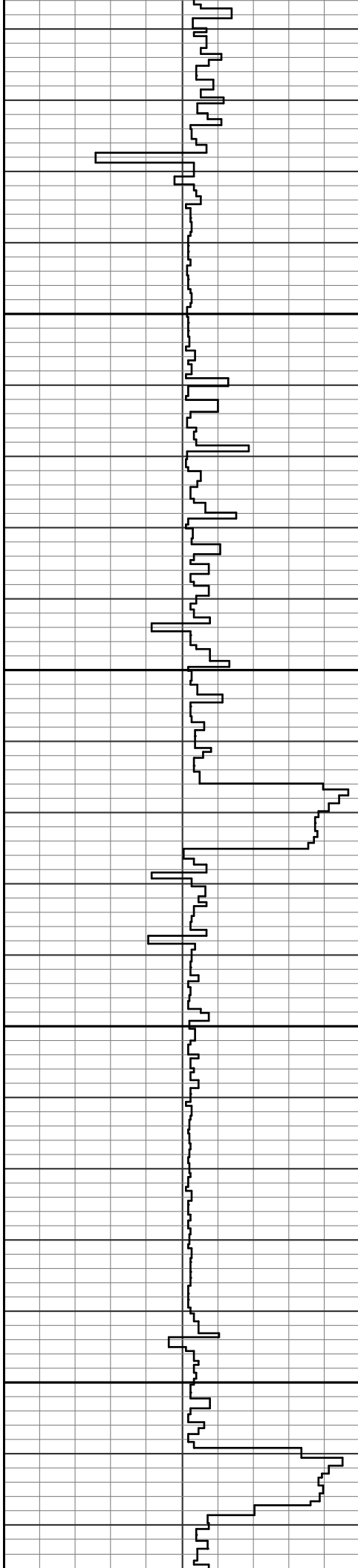






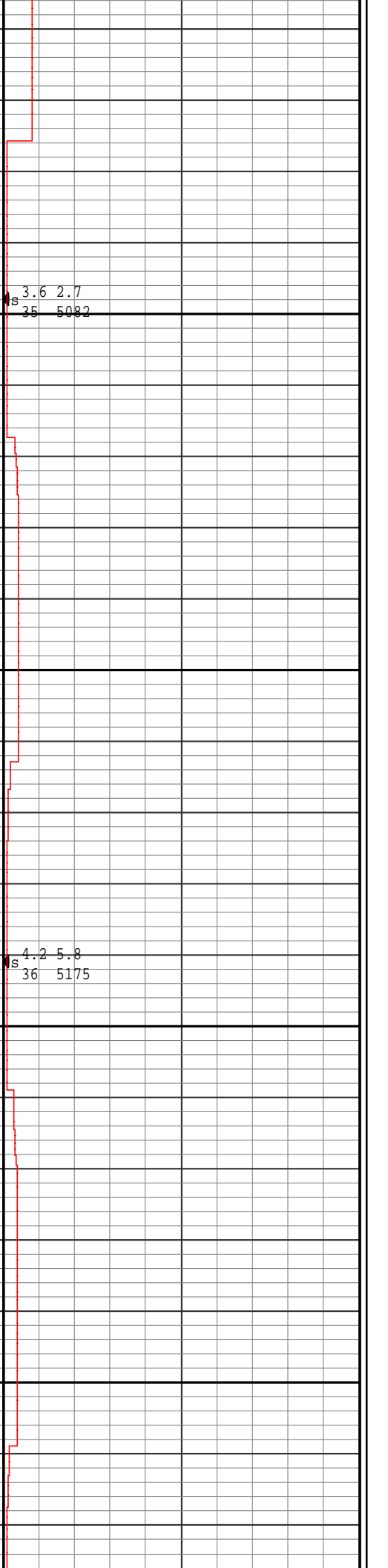
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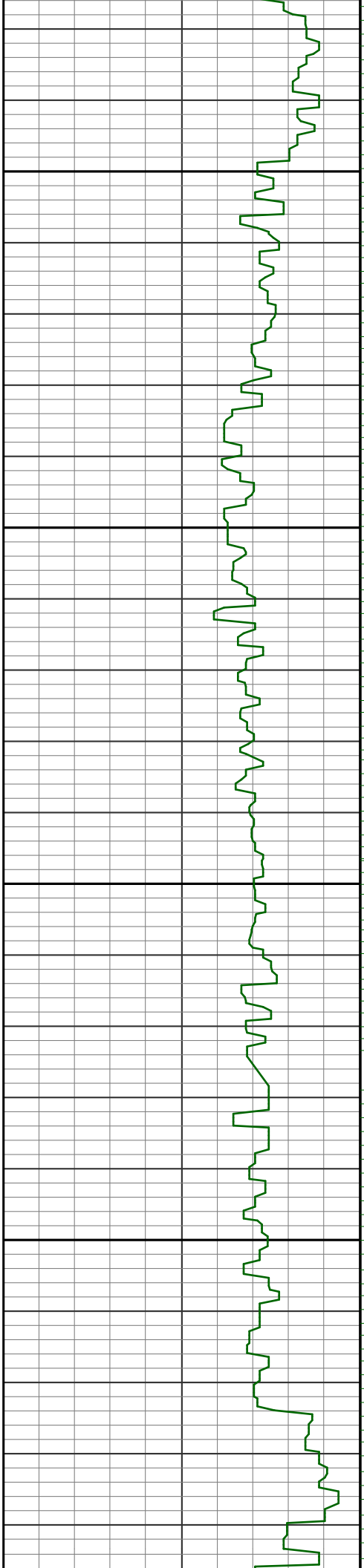
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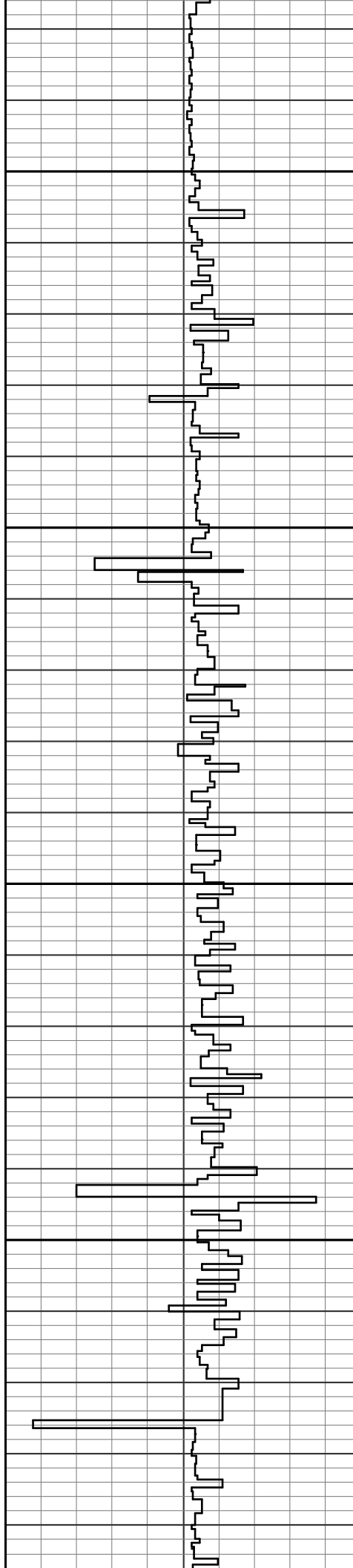
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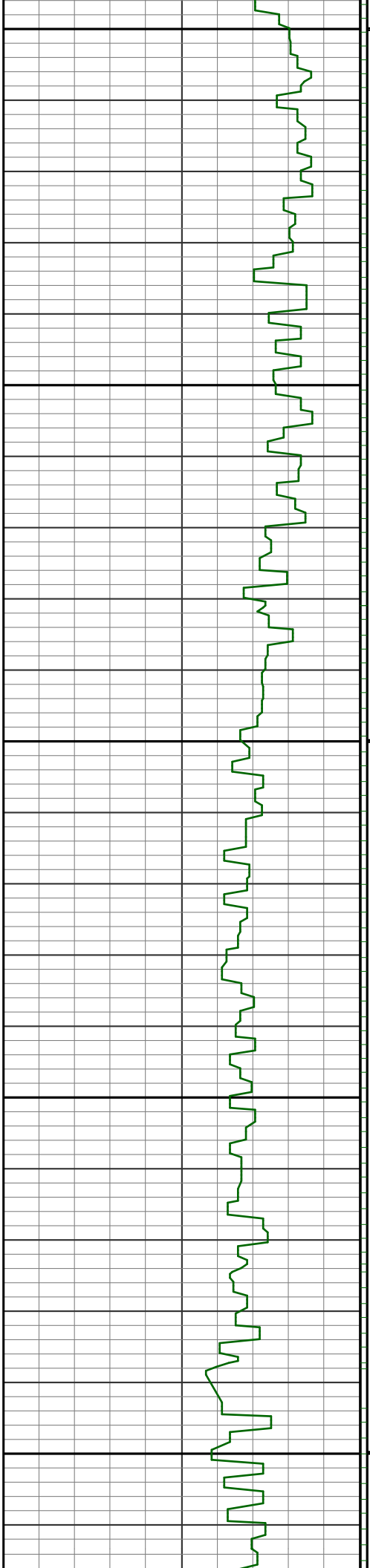
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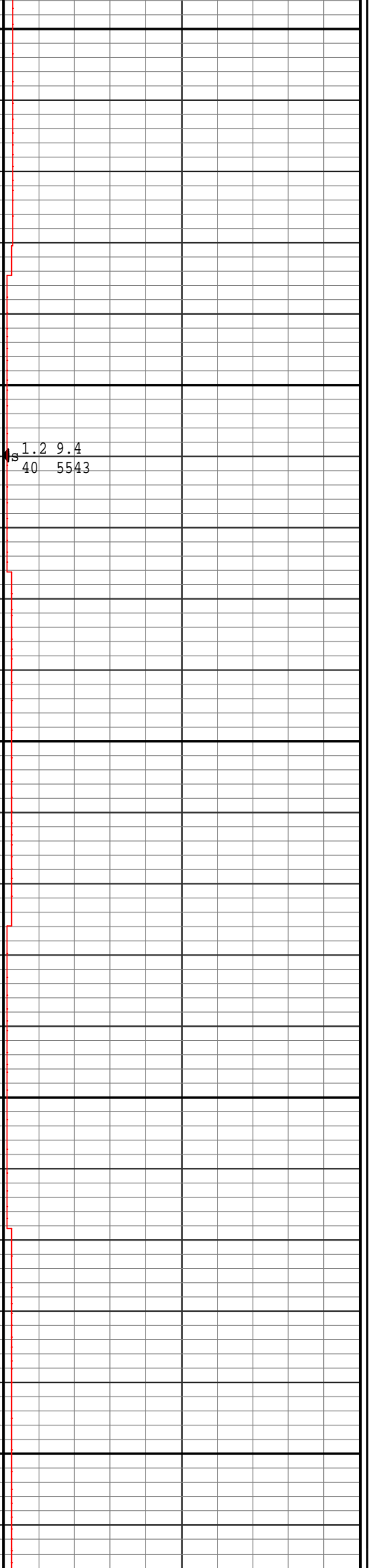
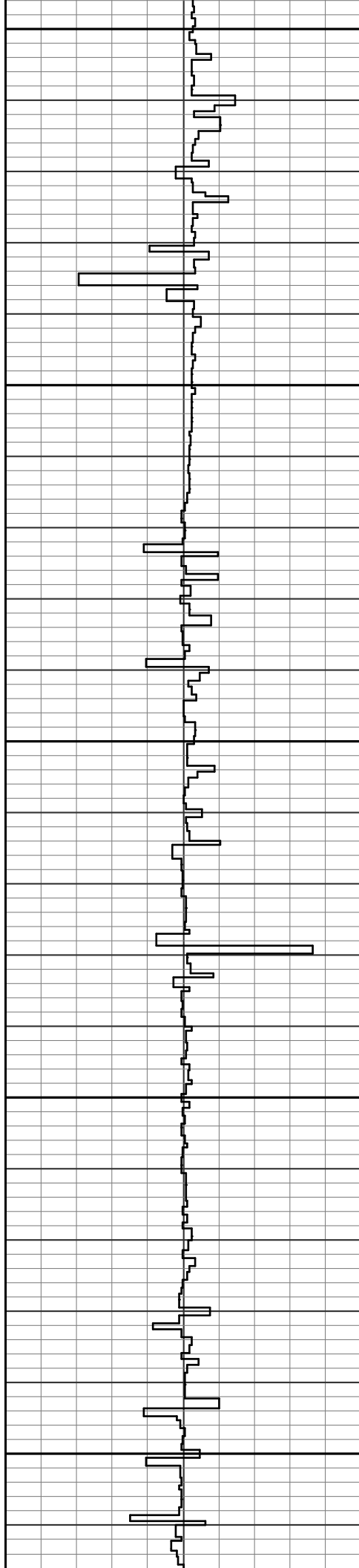
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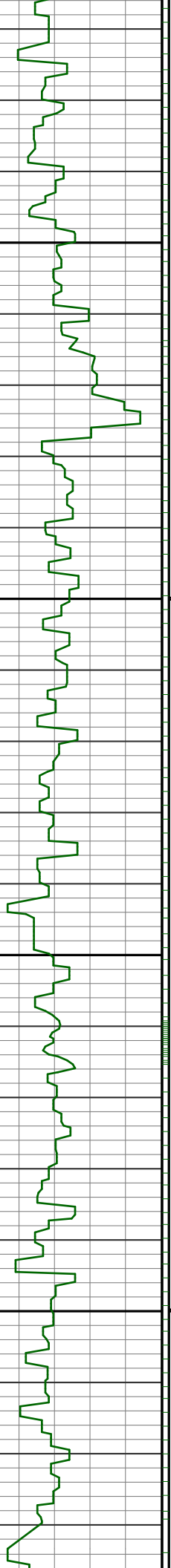
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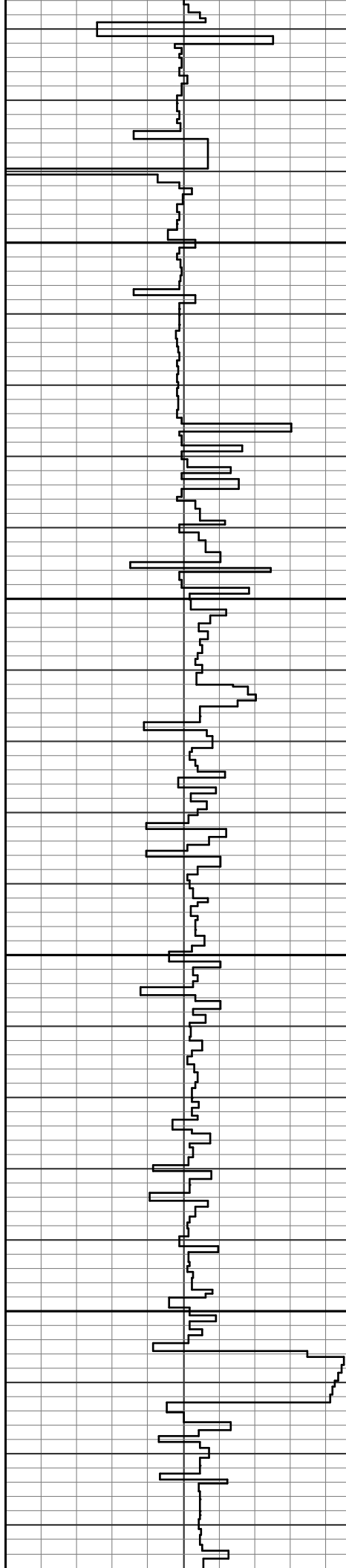


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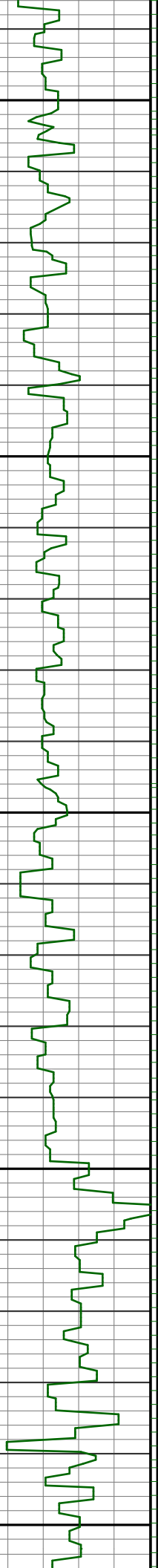
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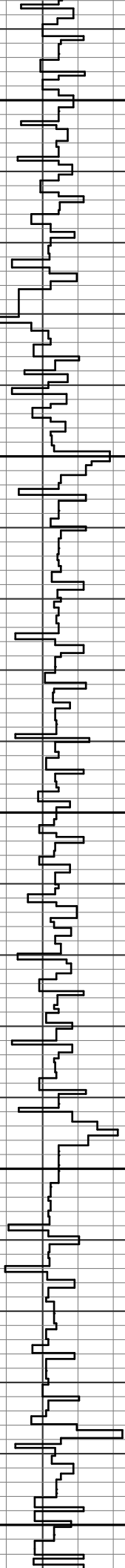
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s 1.5 353.1  
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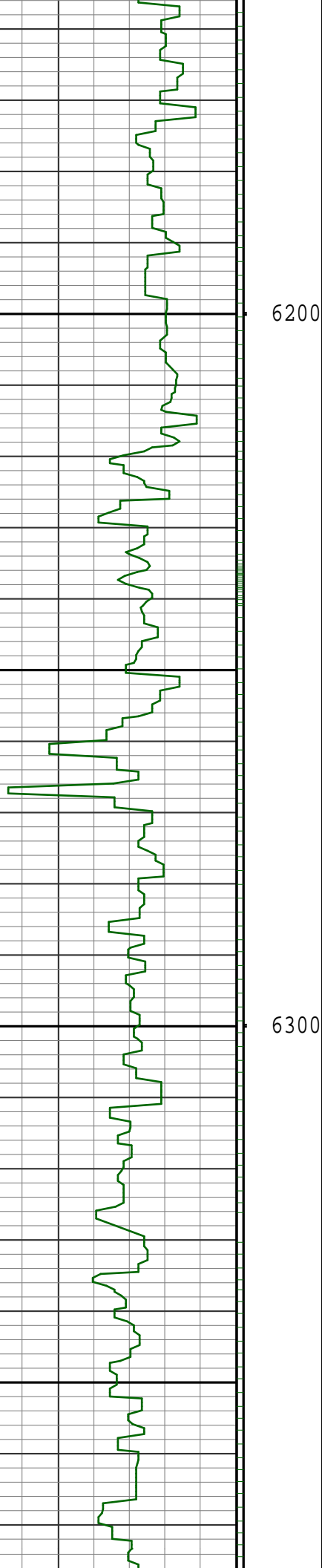
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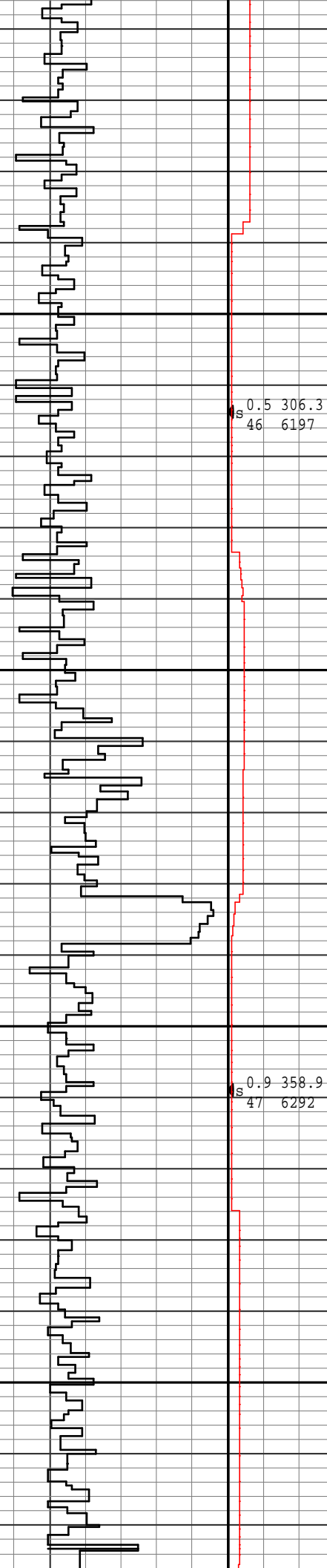
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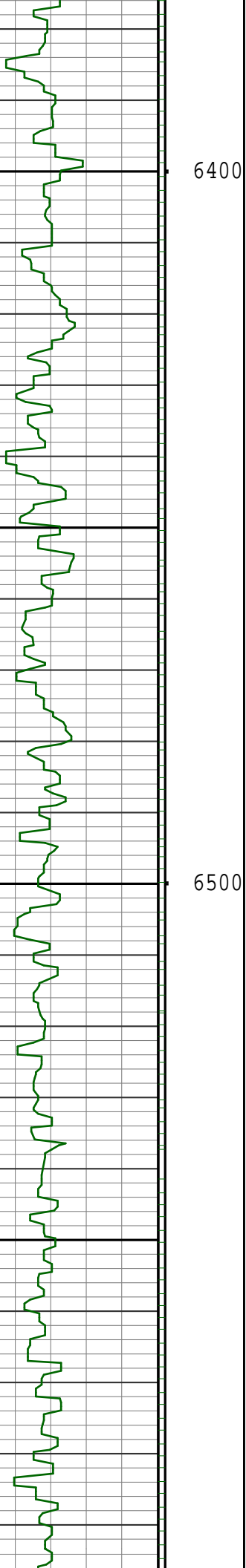
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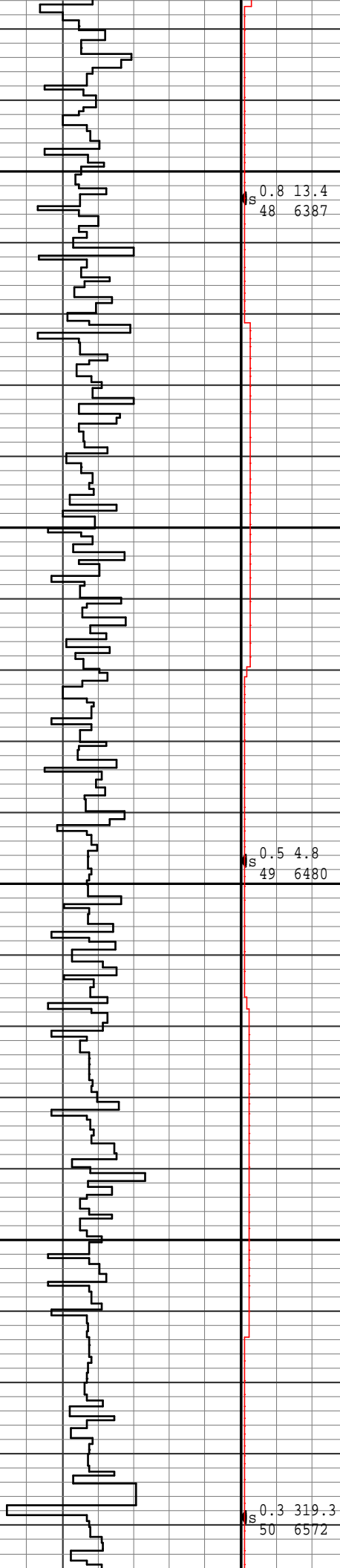
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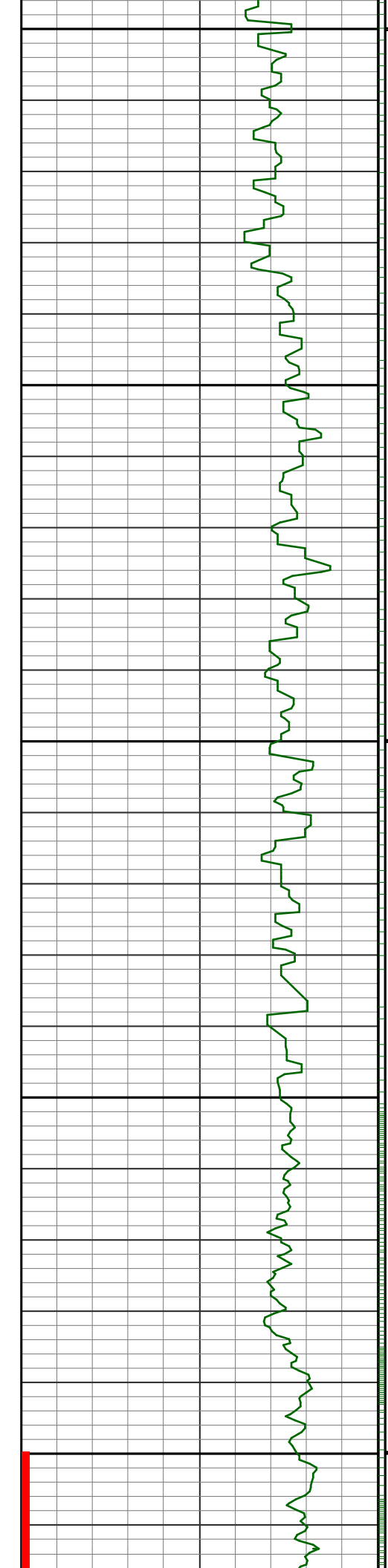
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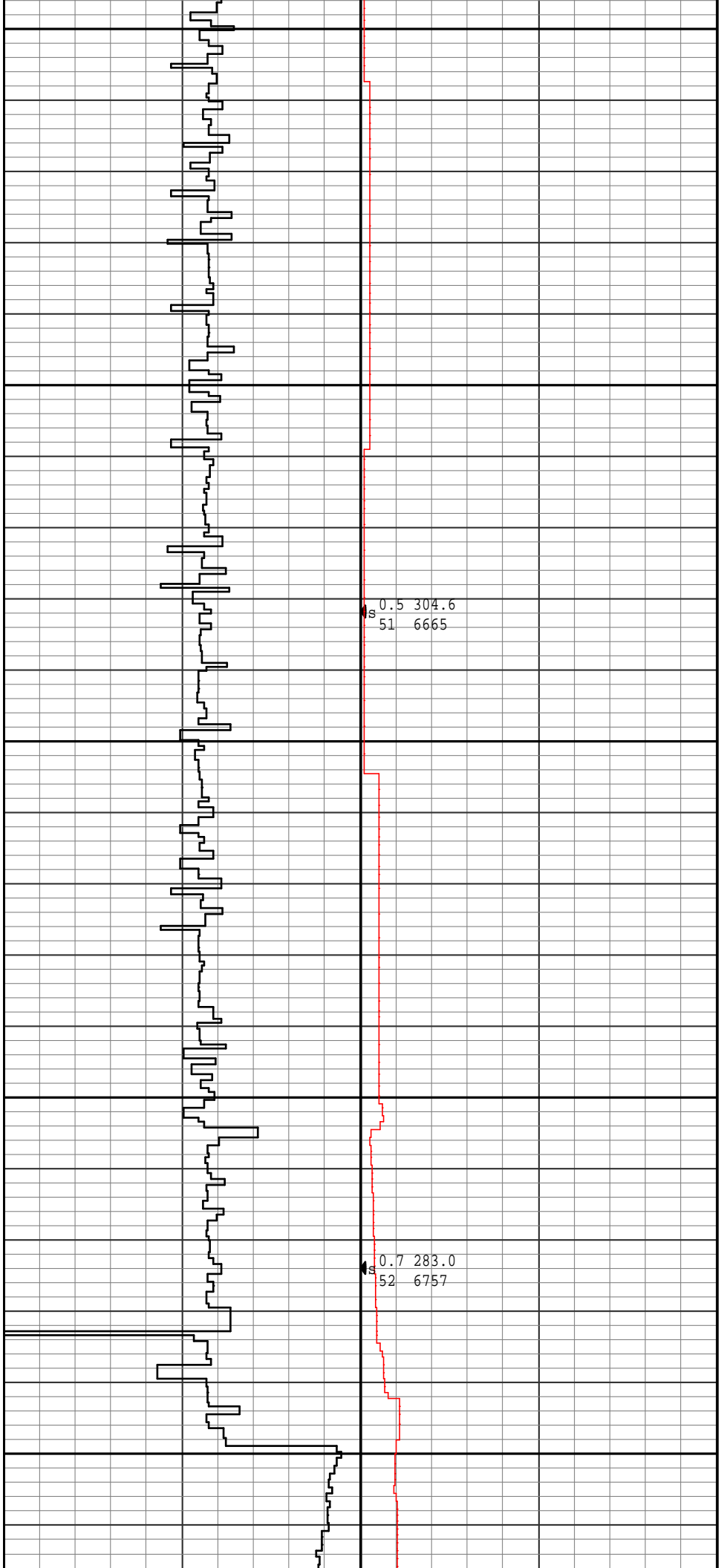
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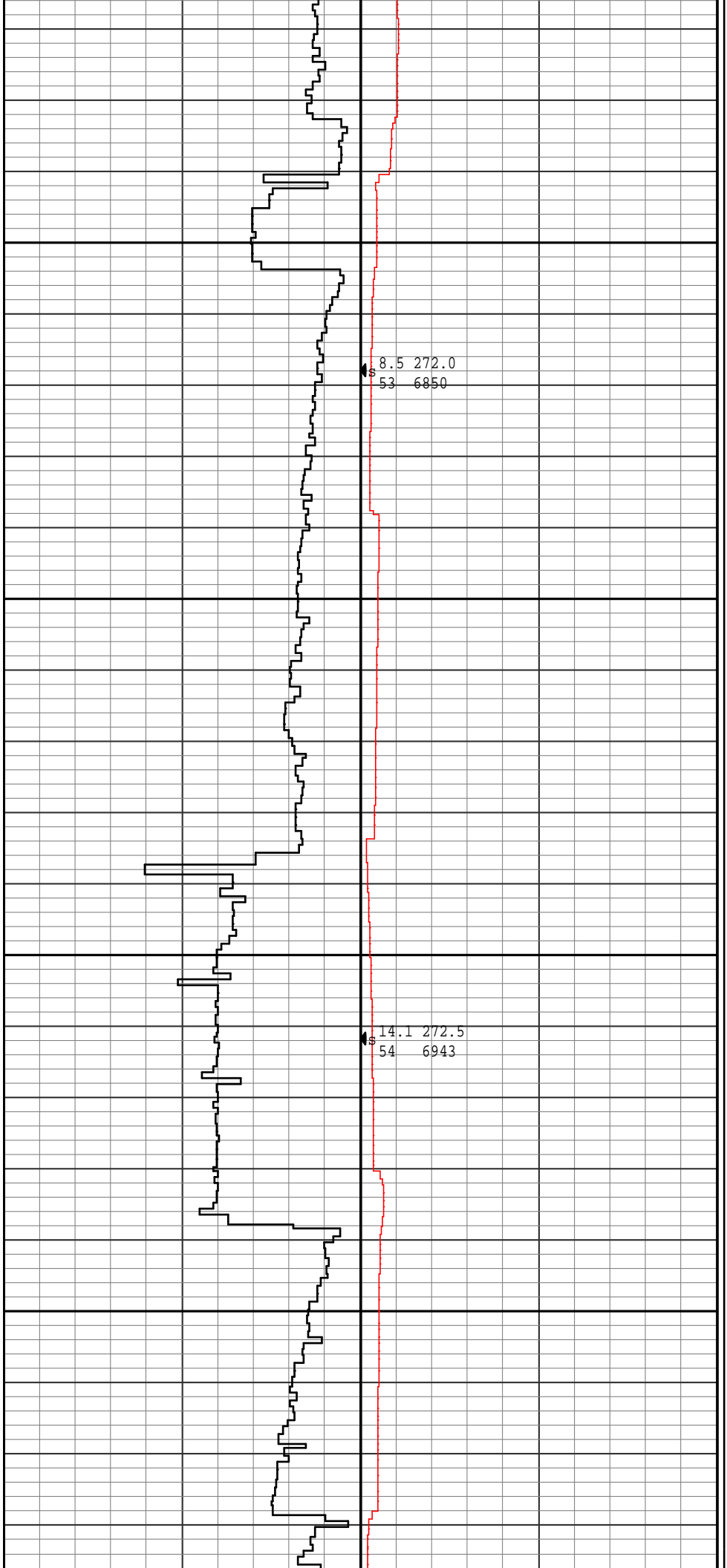
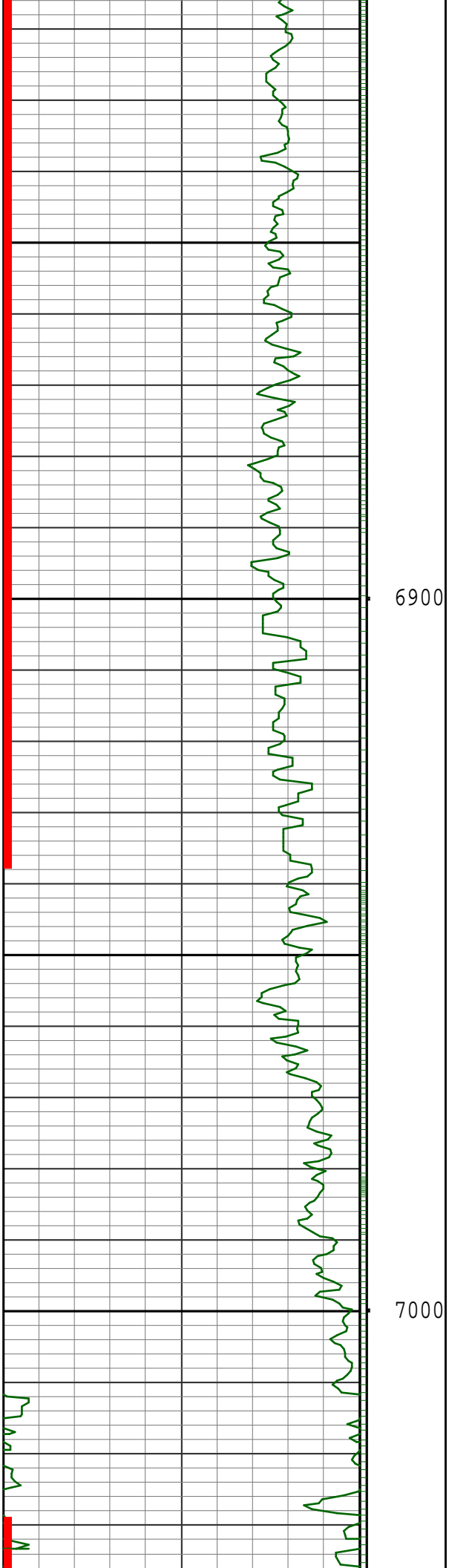
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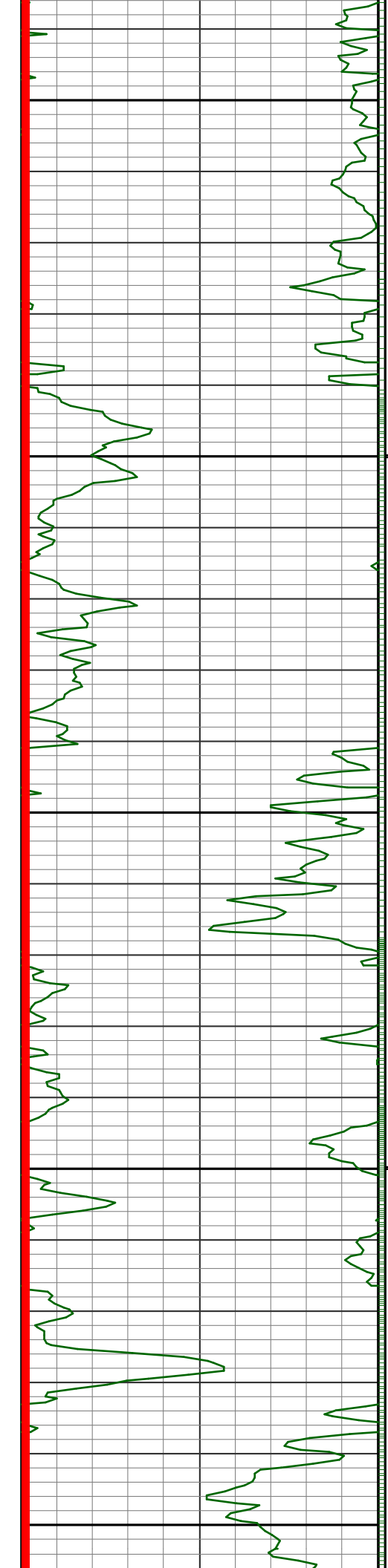
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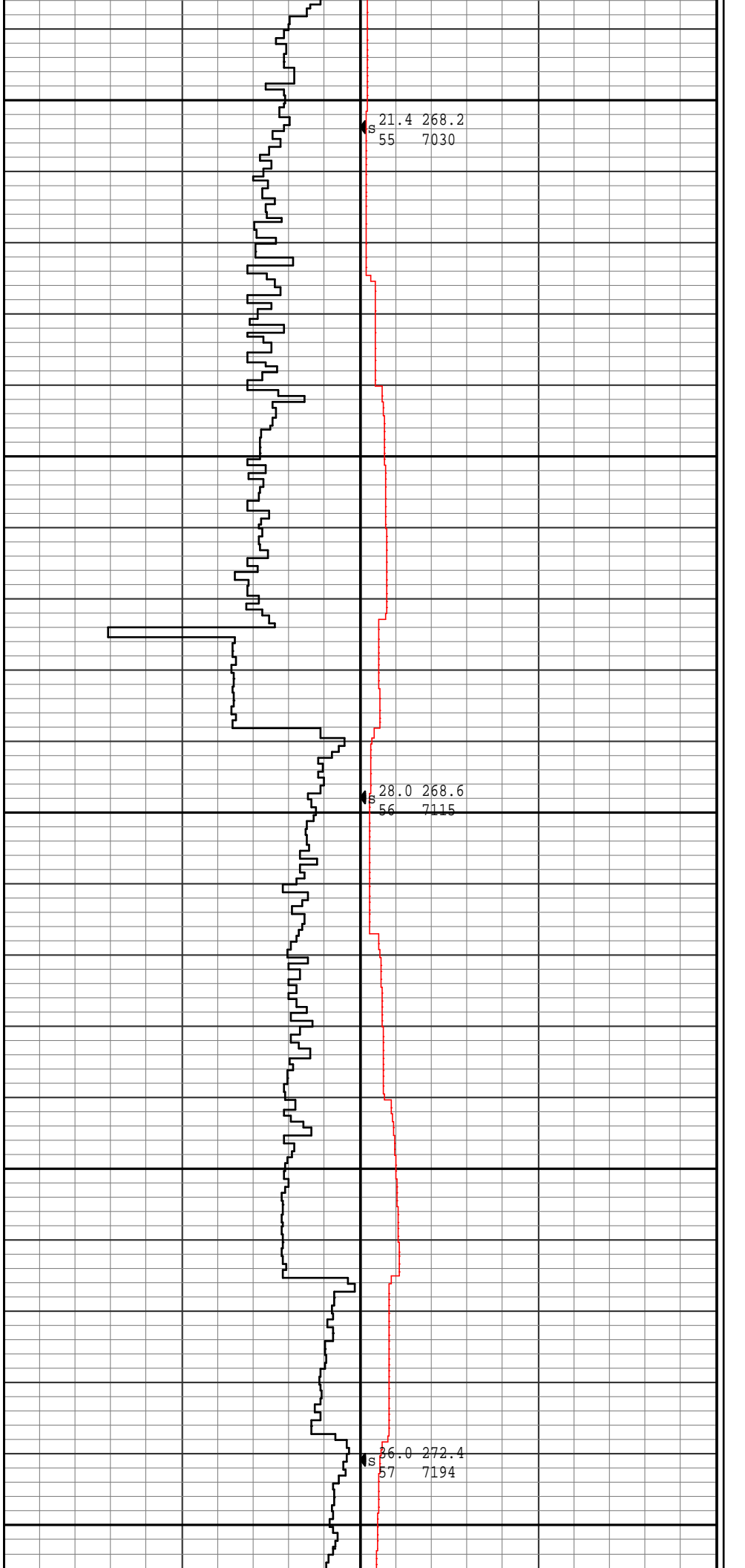


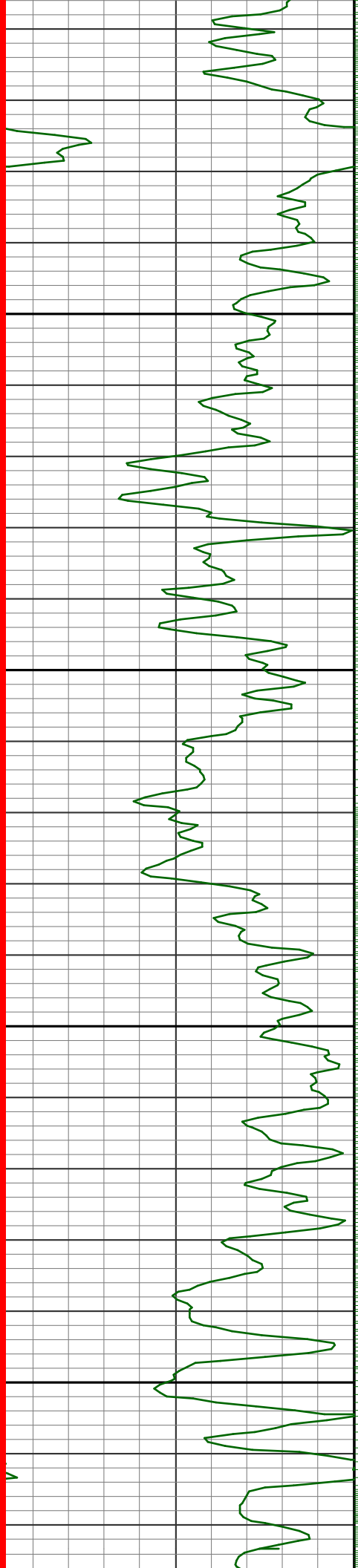




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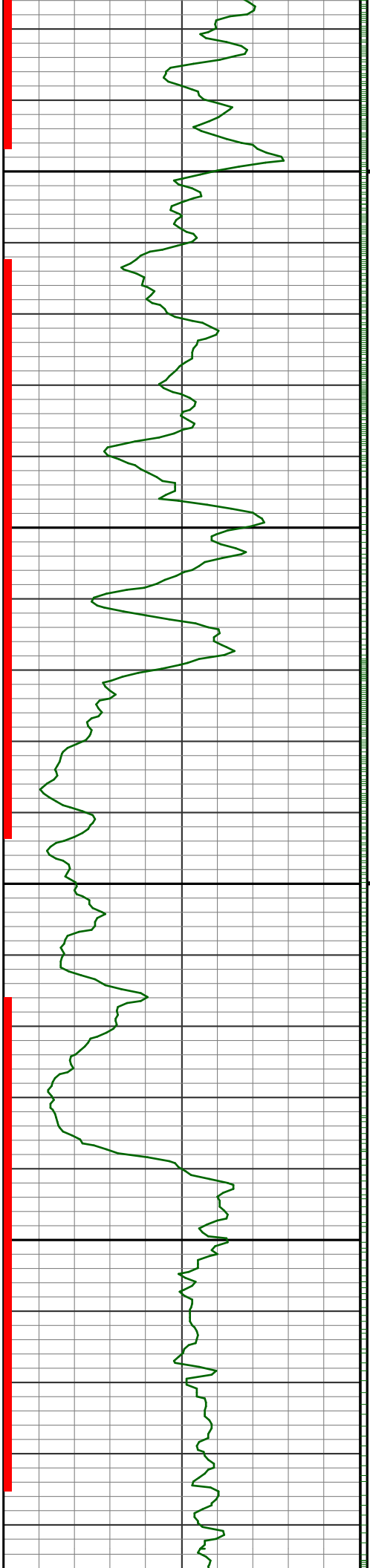


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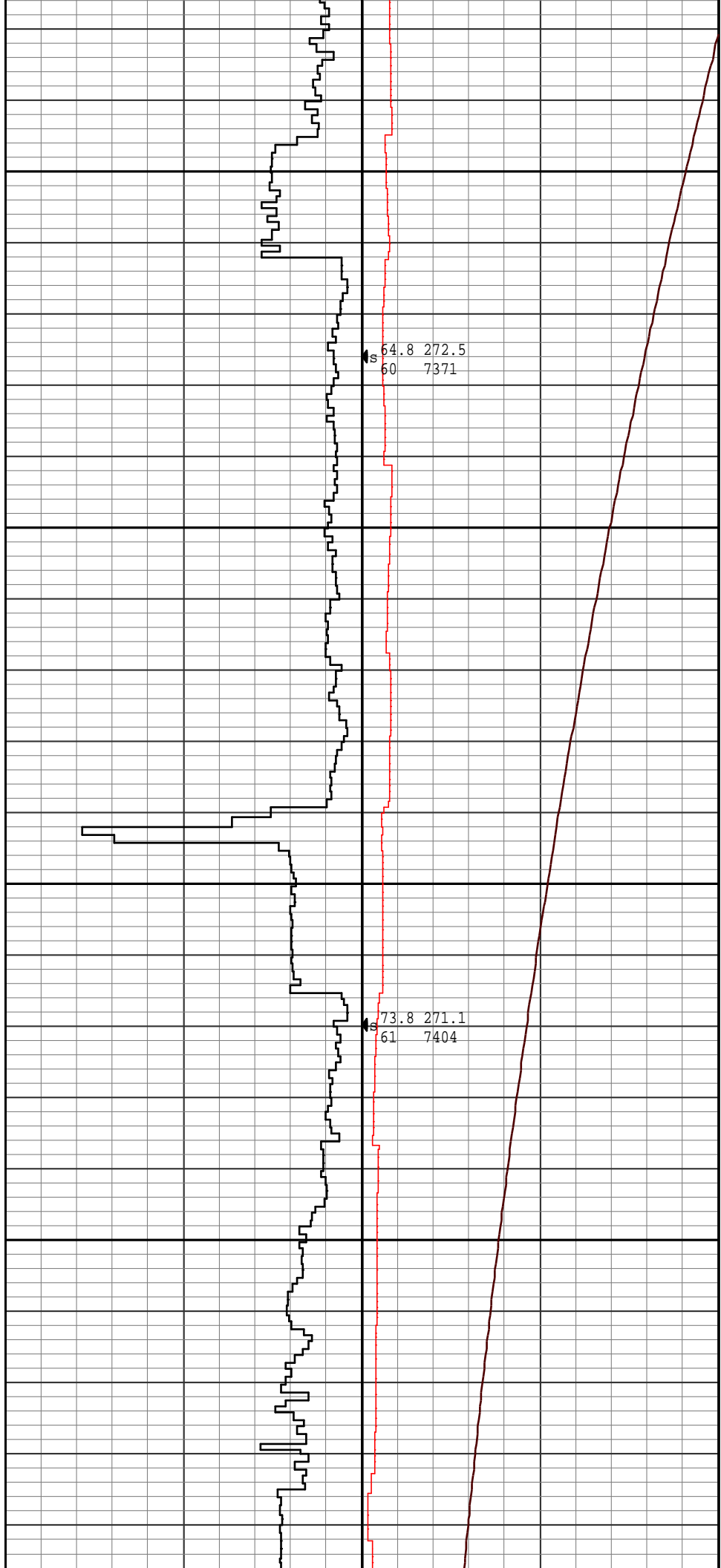
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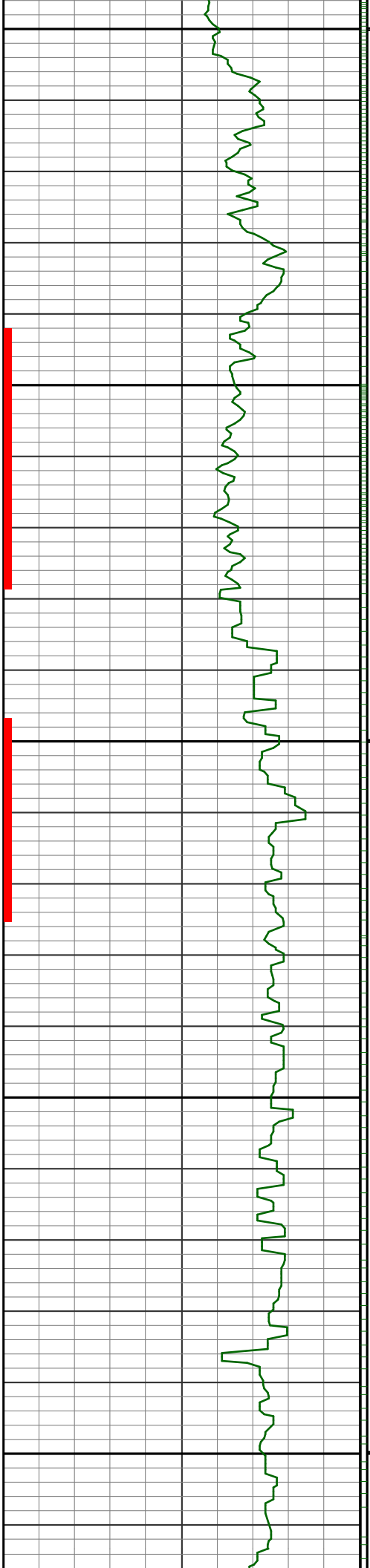
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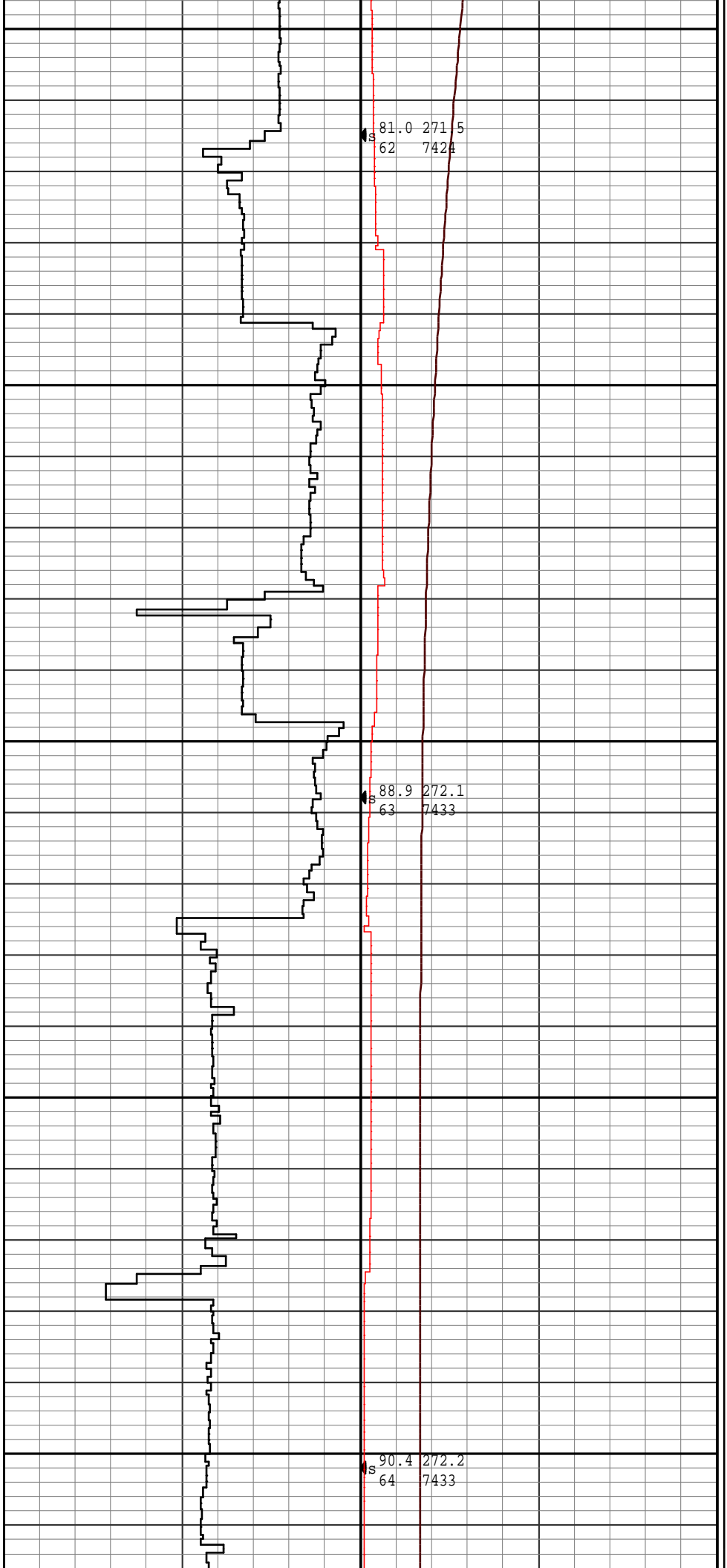


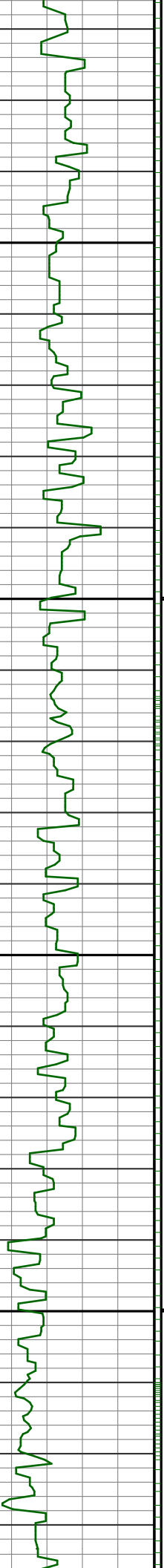


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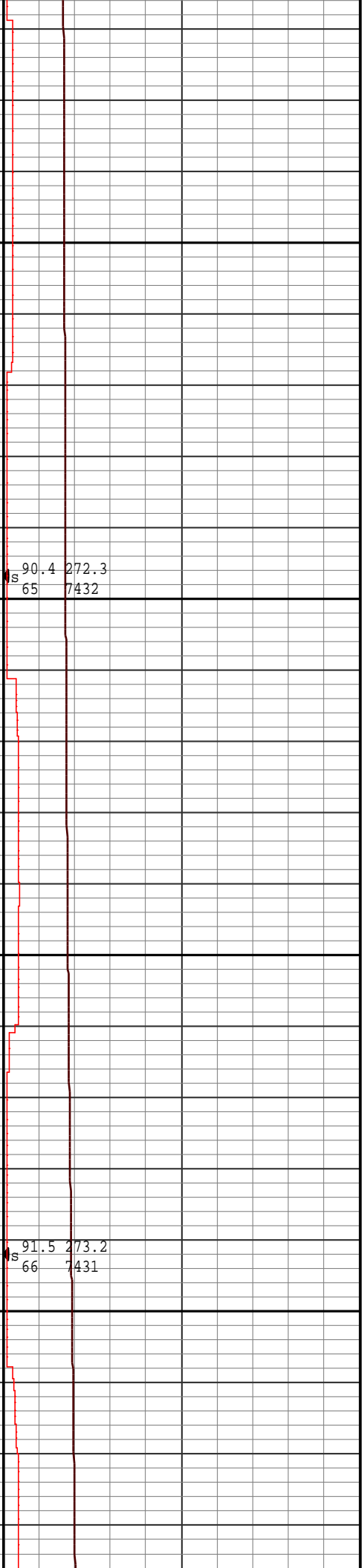
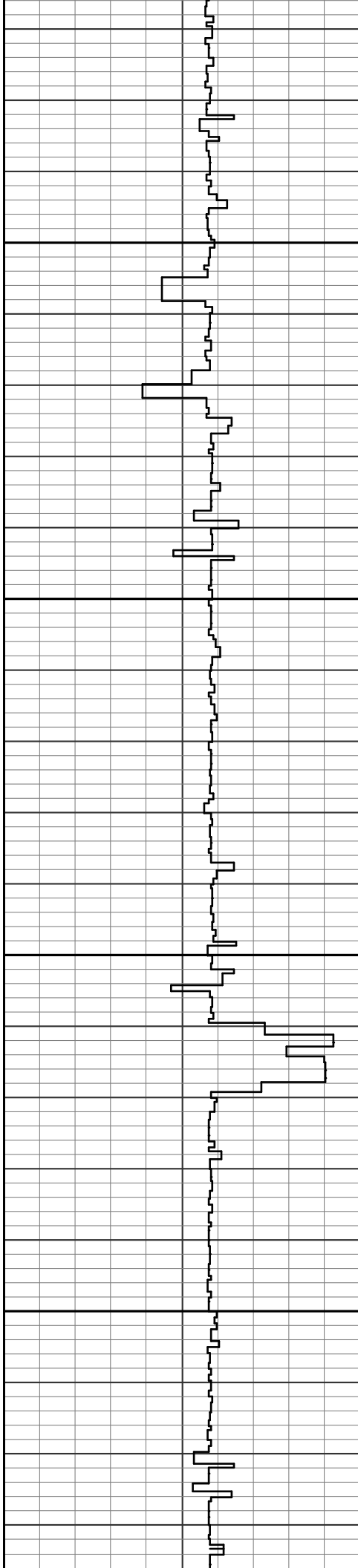
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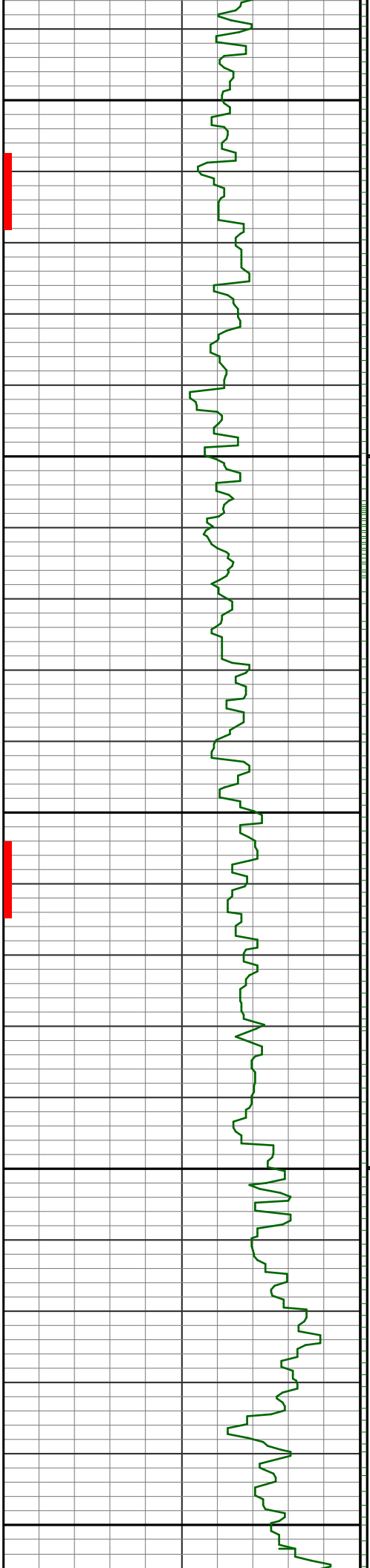
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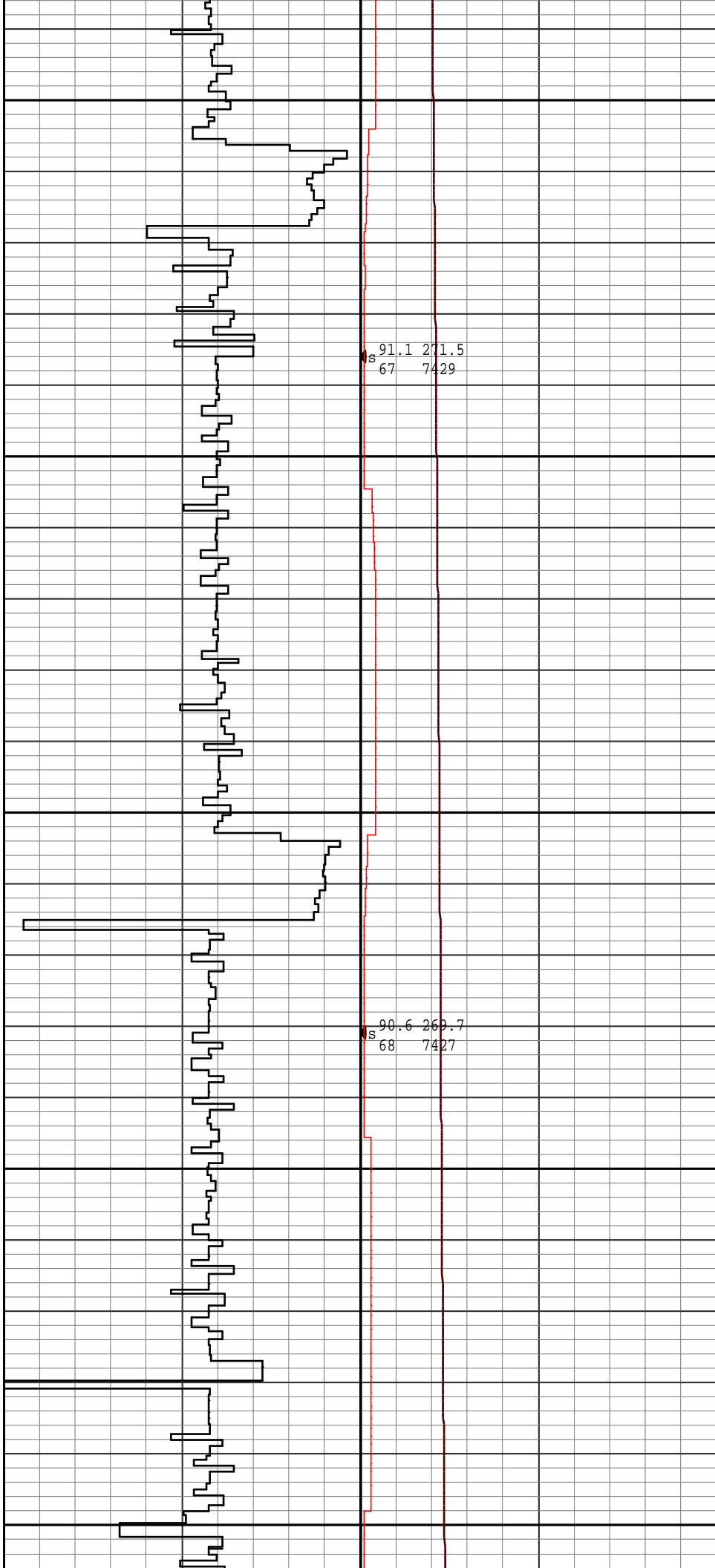
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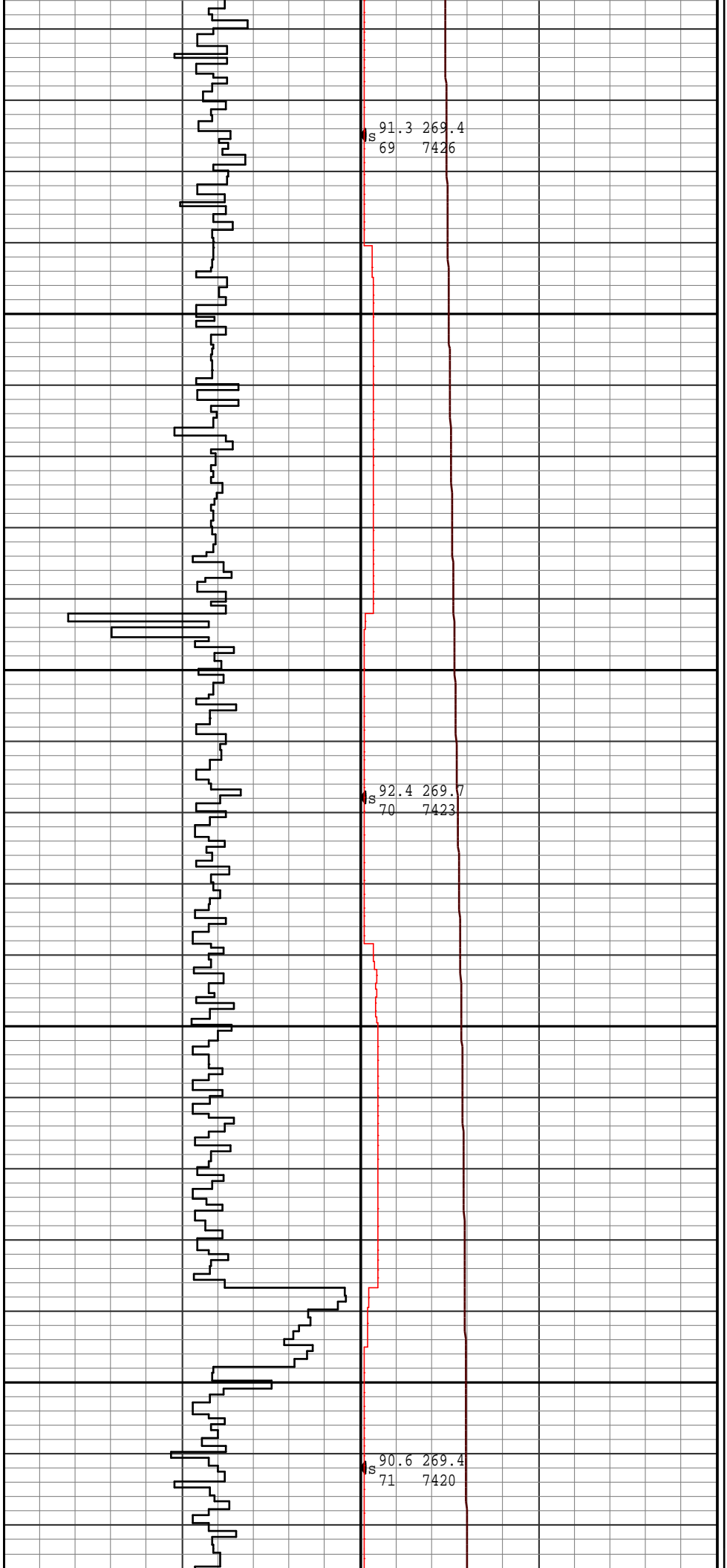
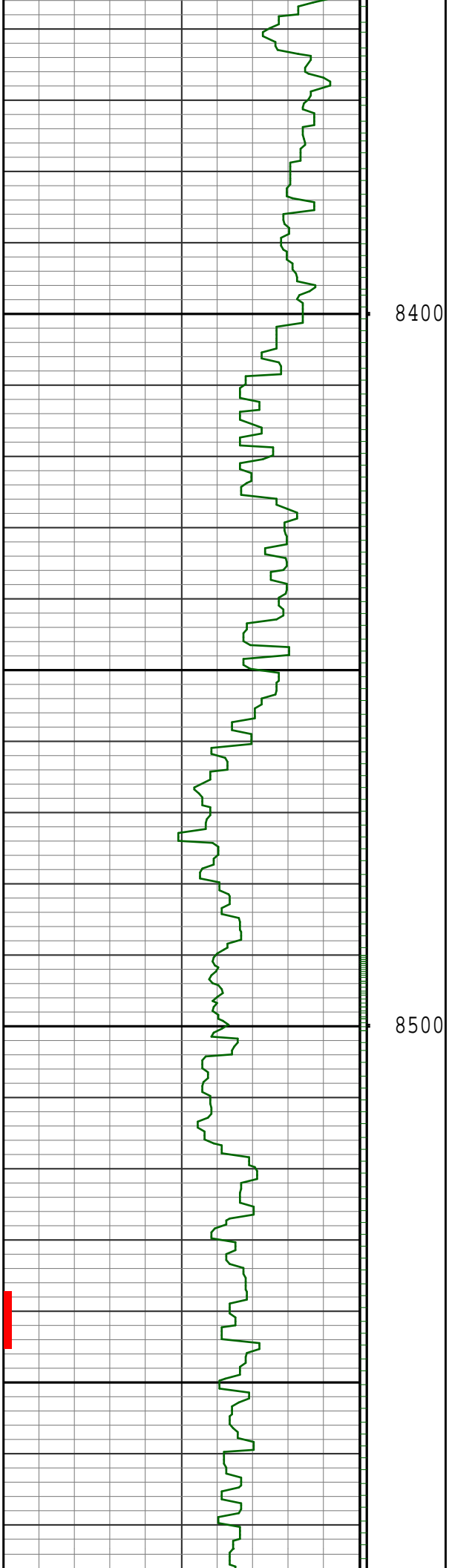
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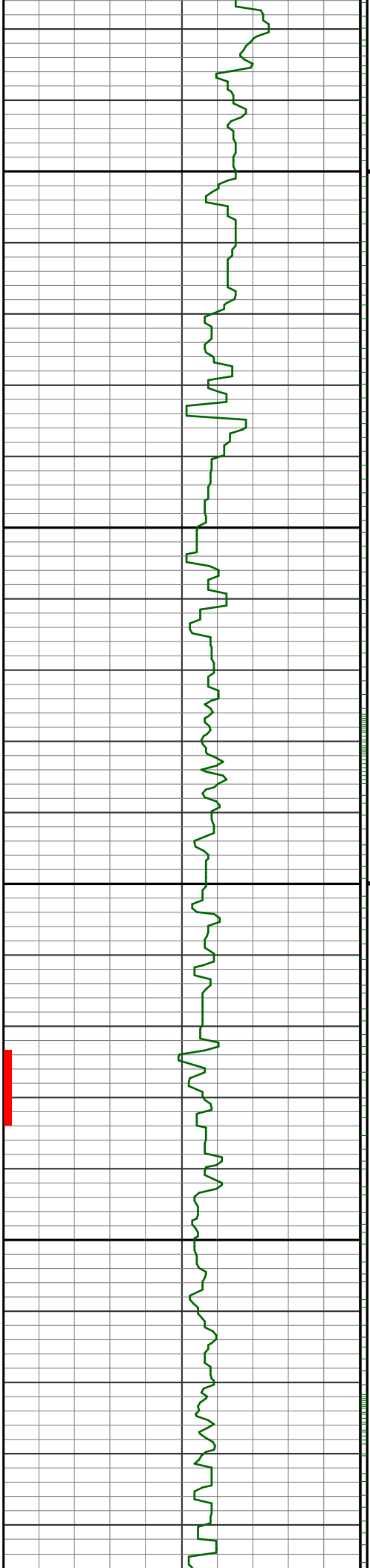
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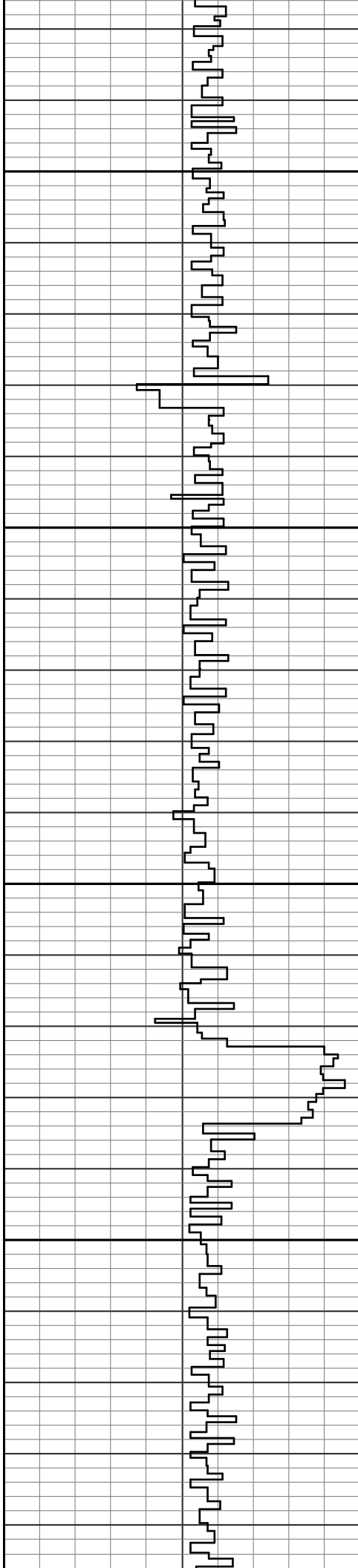






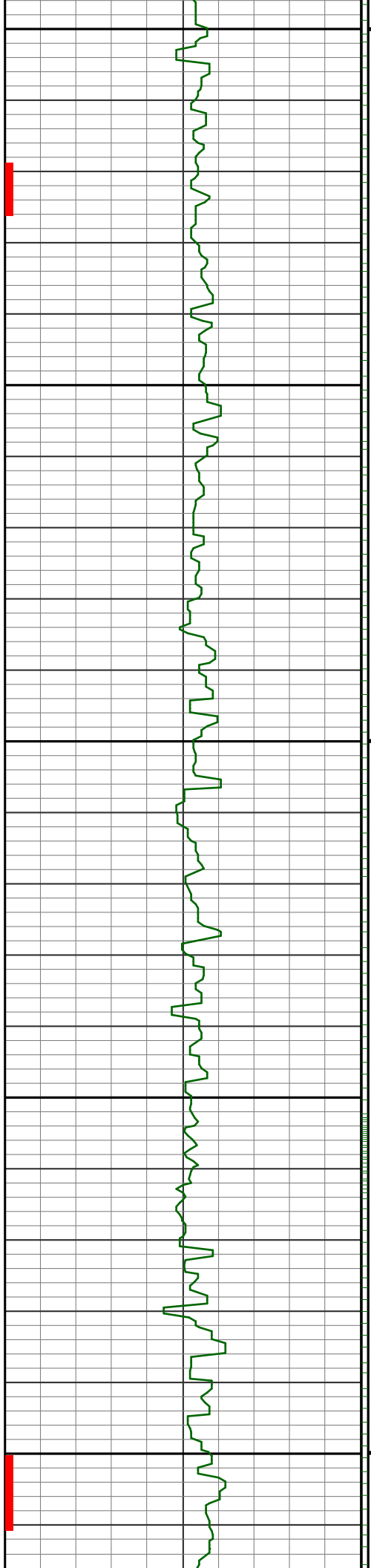
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8700



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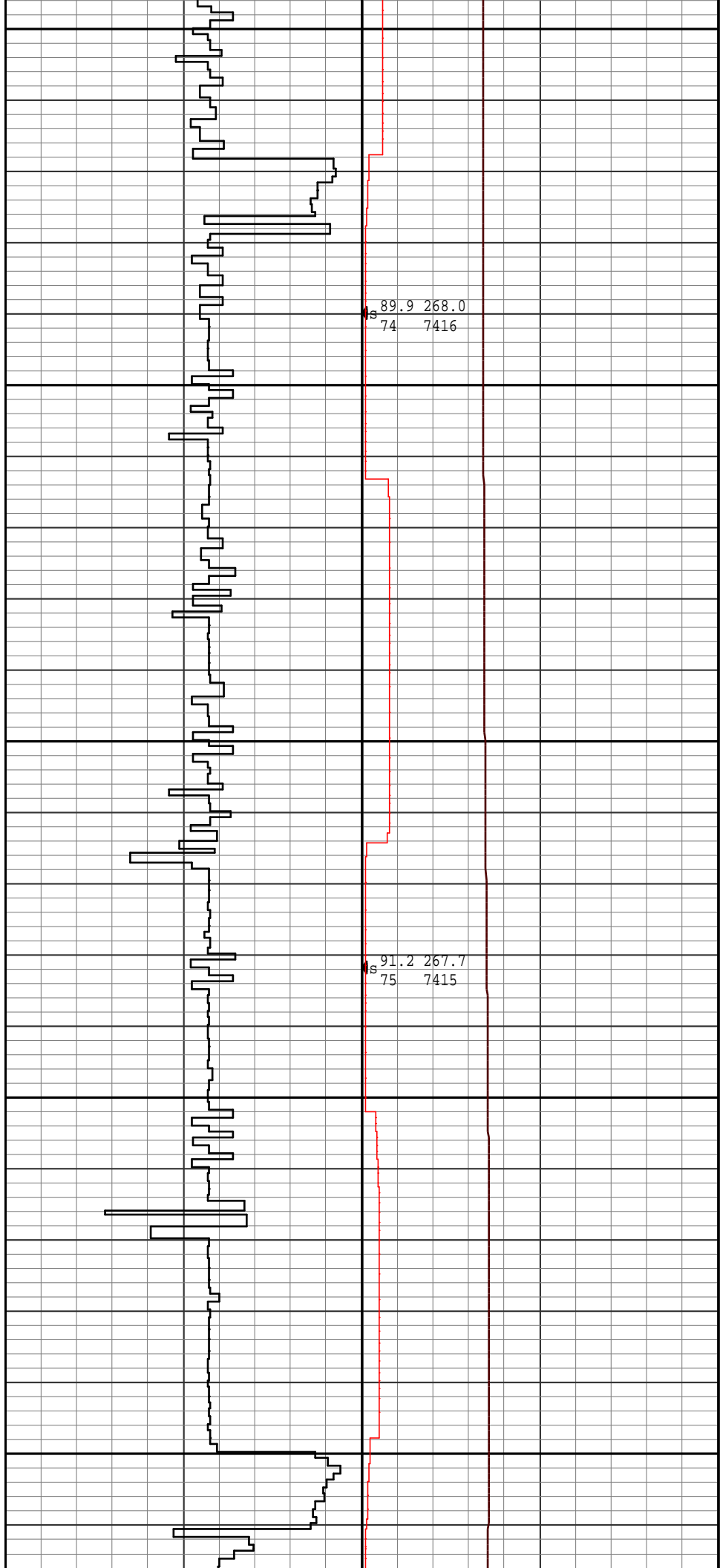
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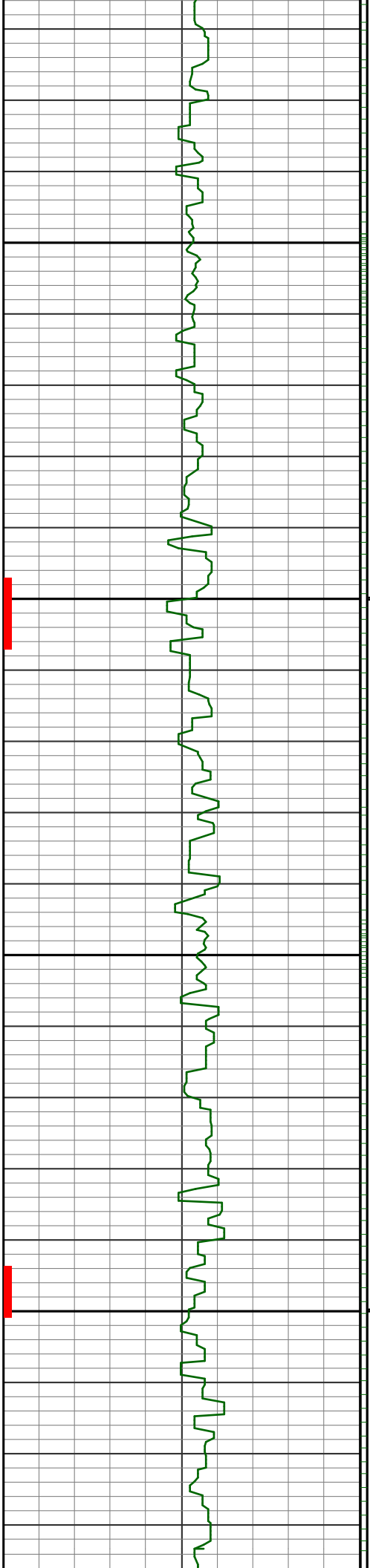


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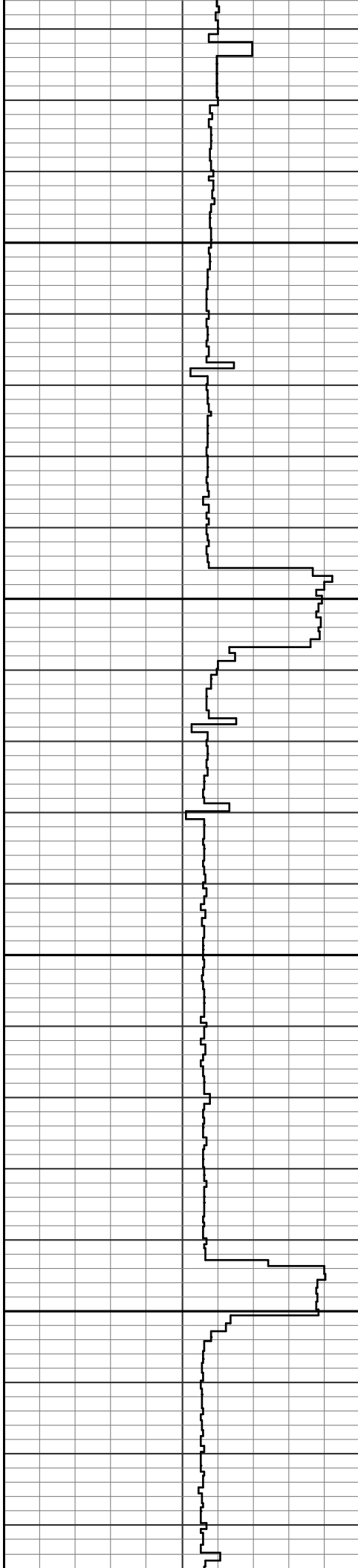
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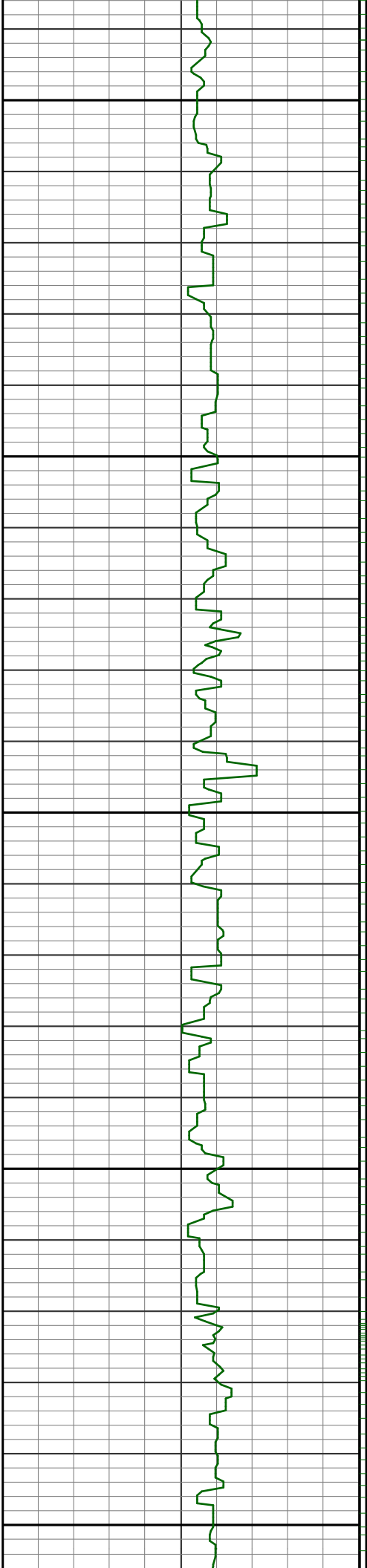
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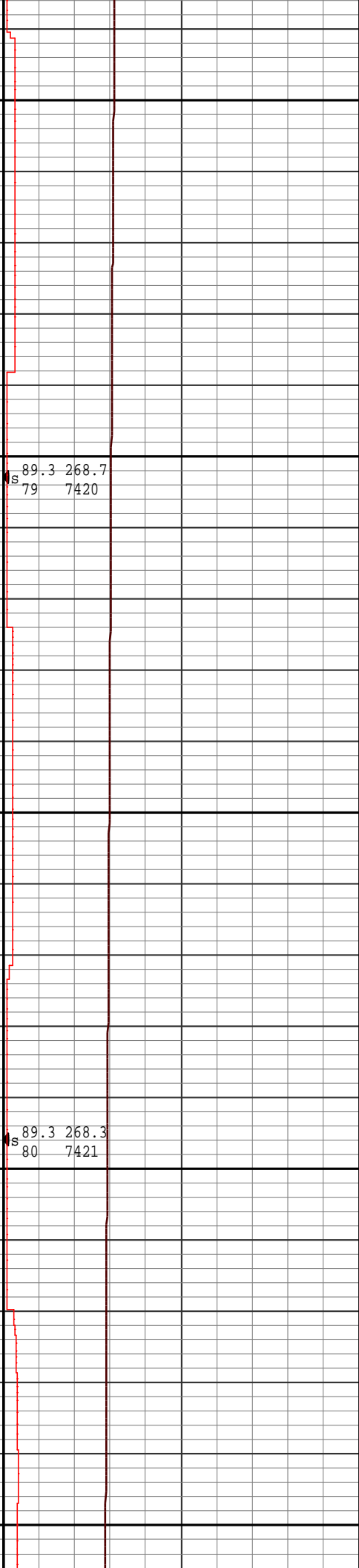
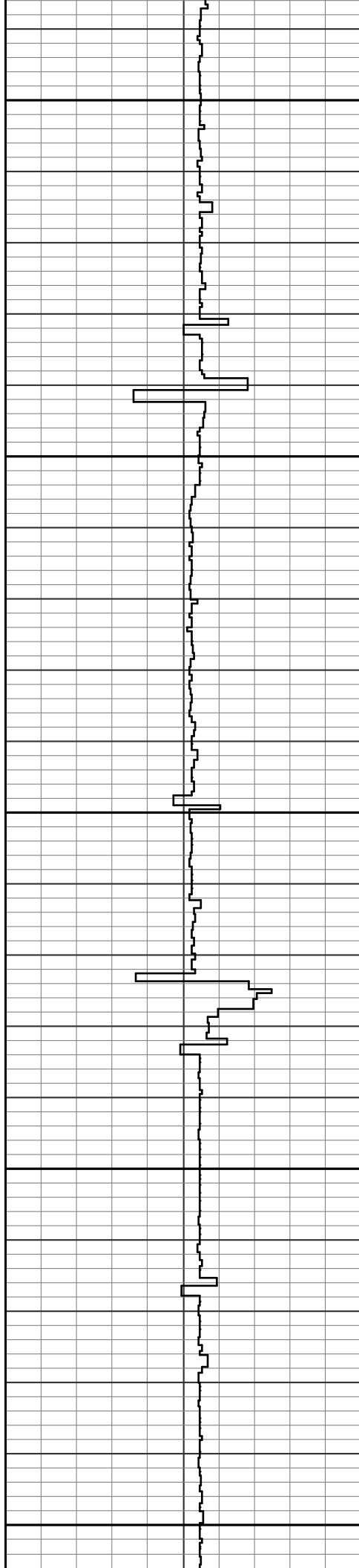
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S 88.9 268.8  
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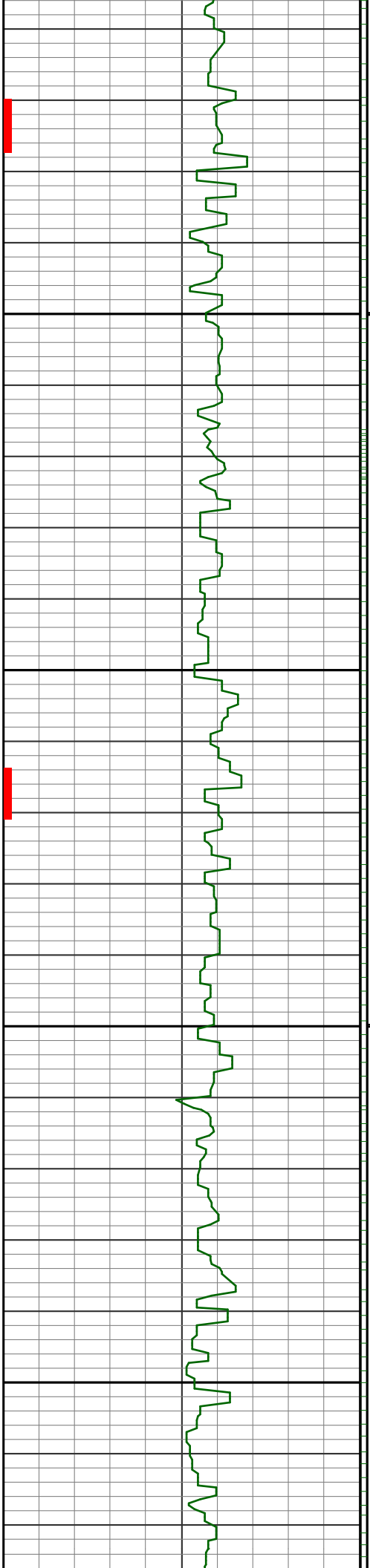
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9400



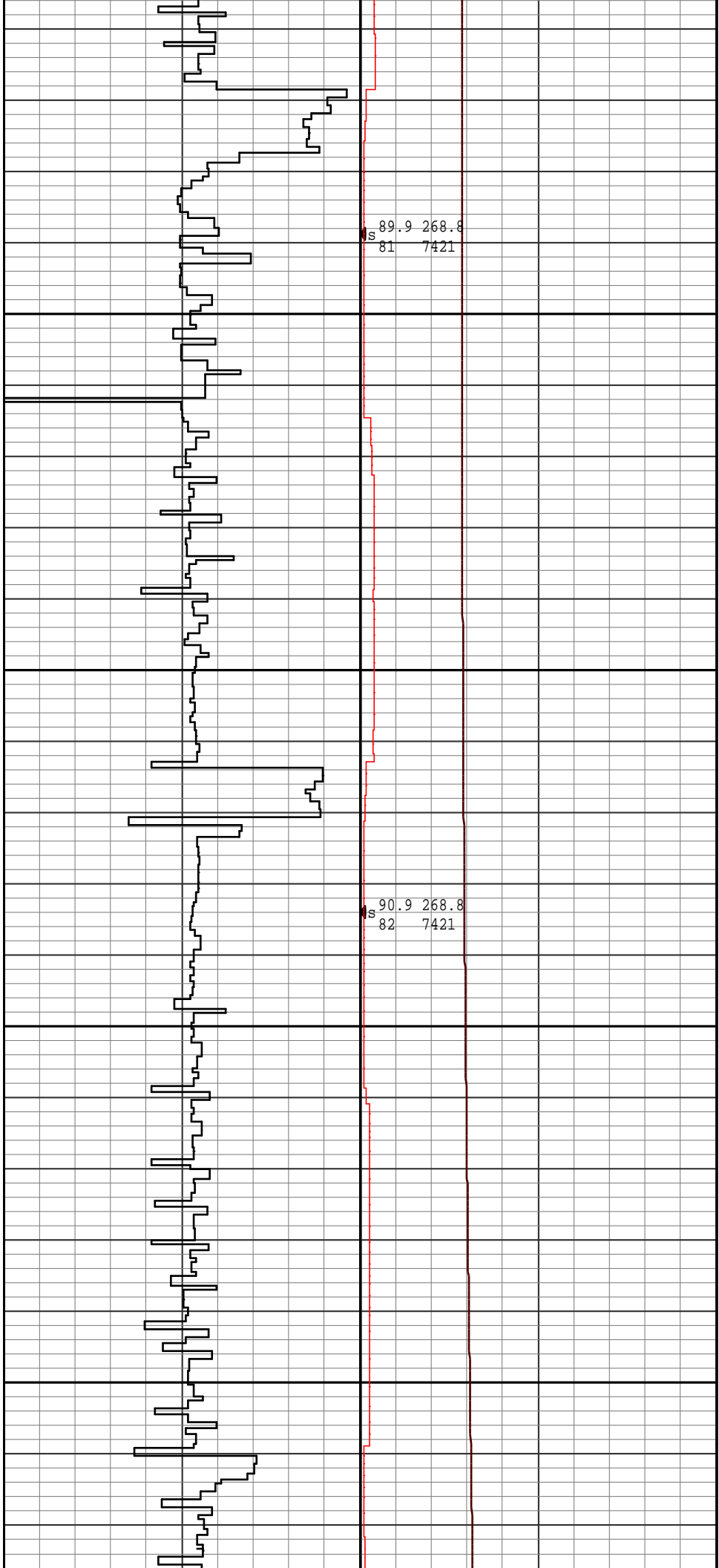
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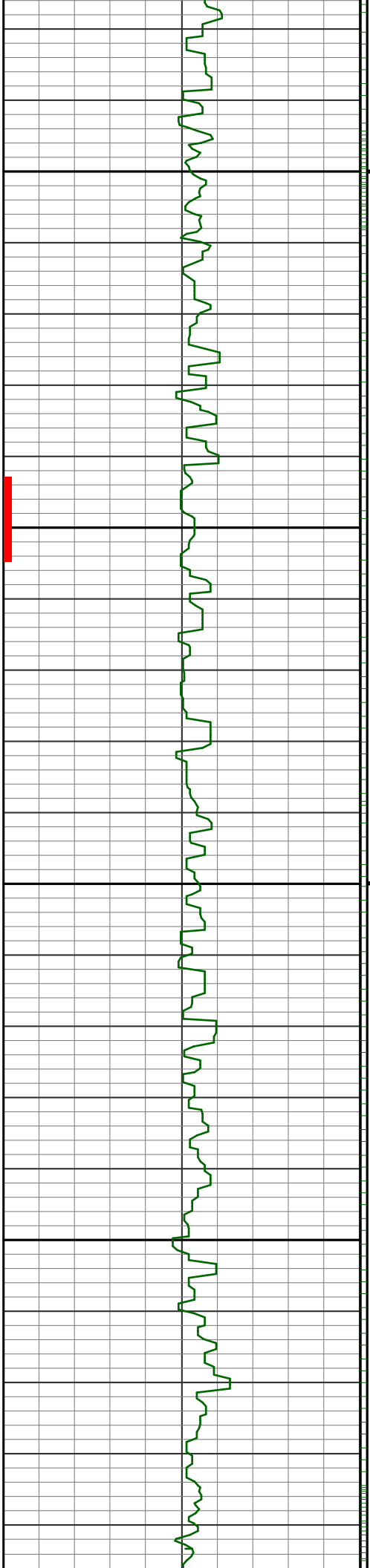
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9500

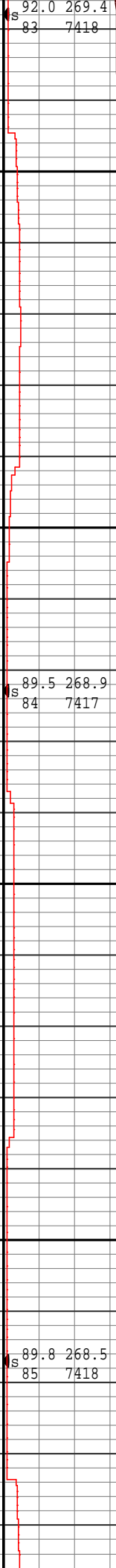
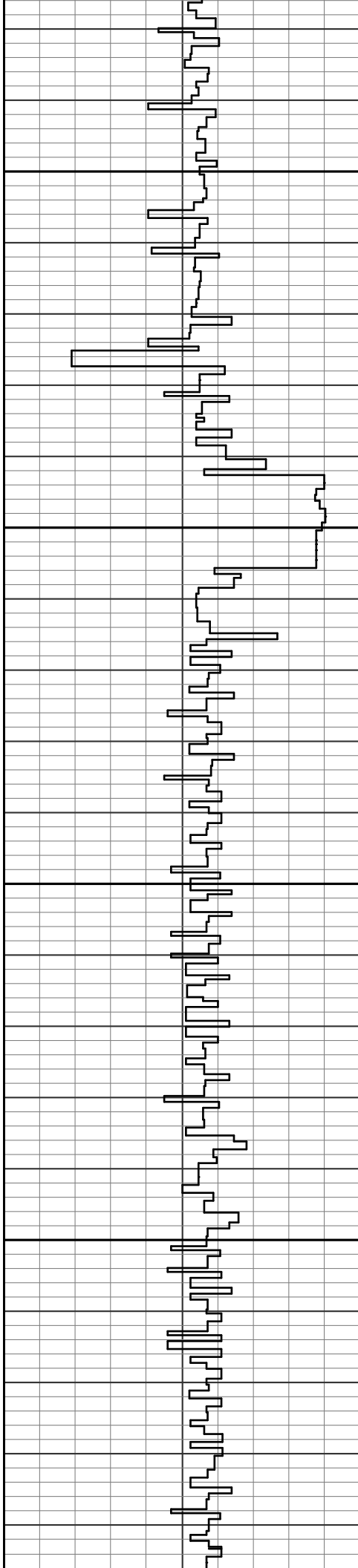
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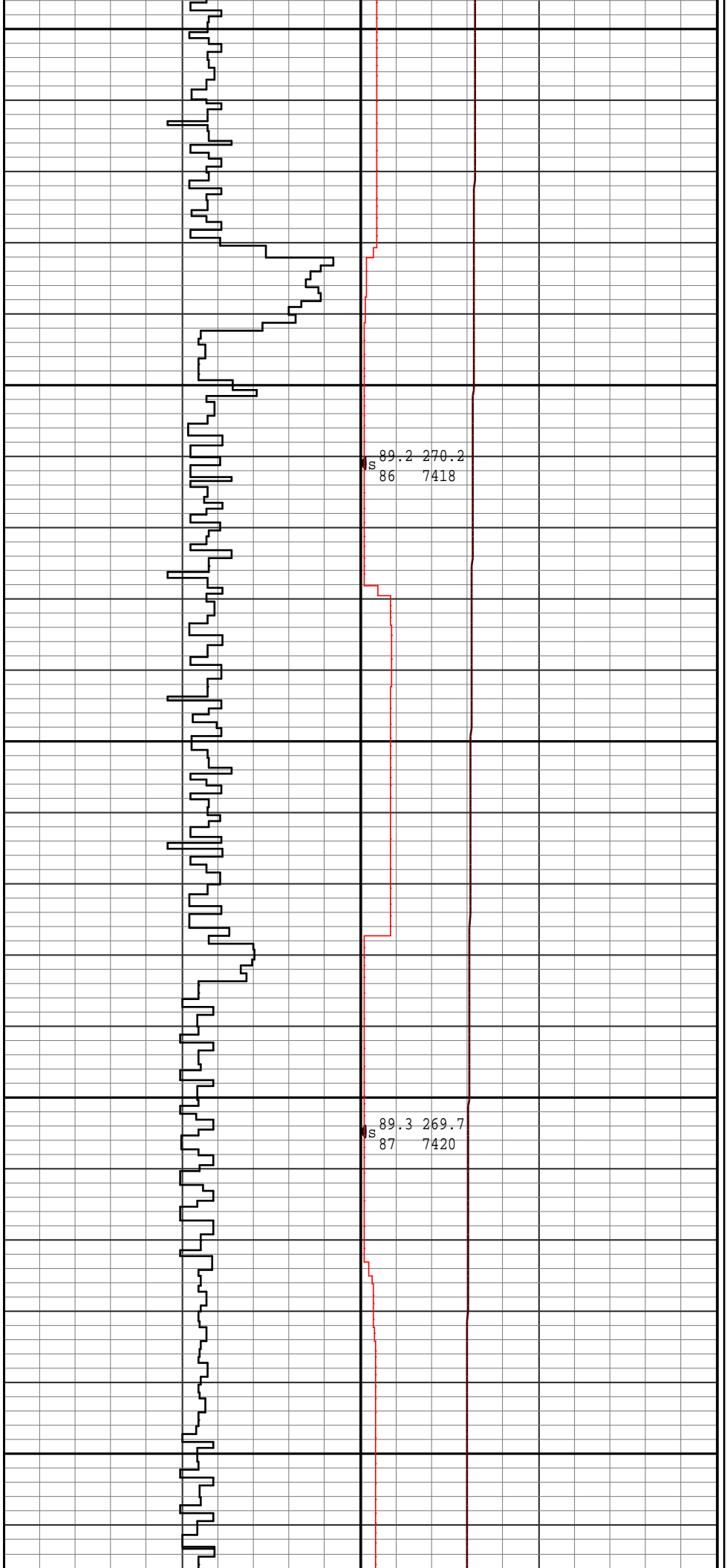
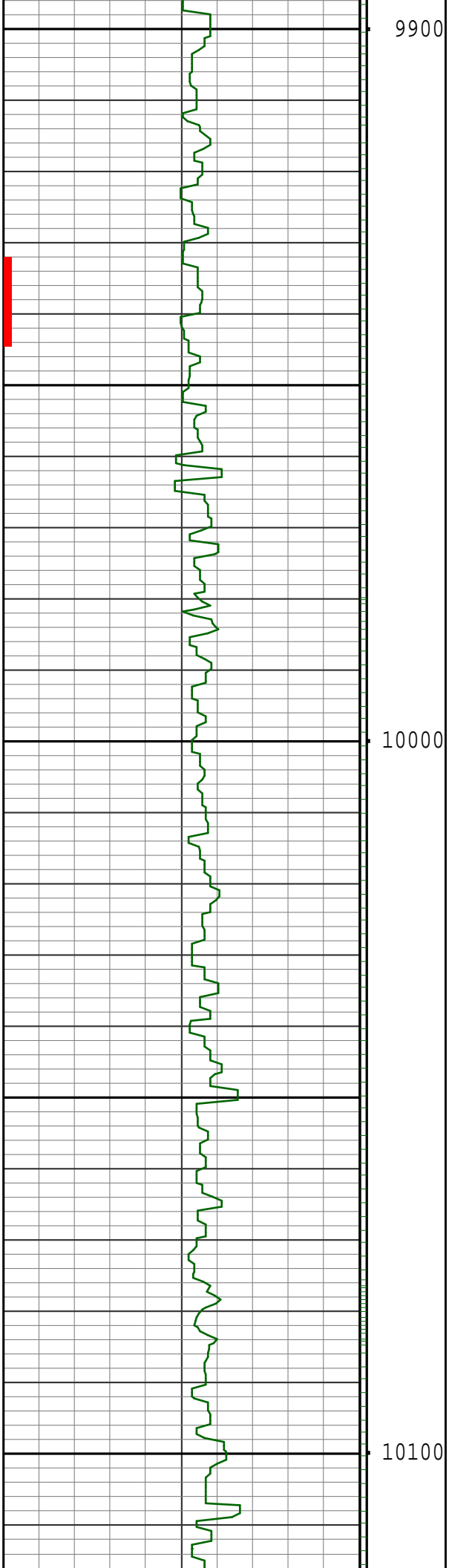


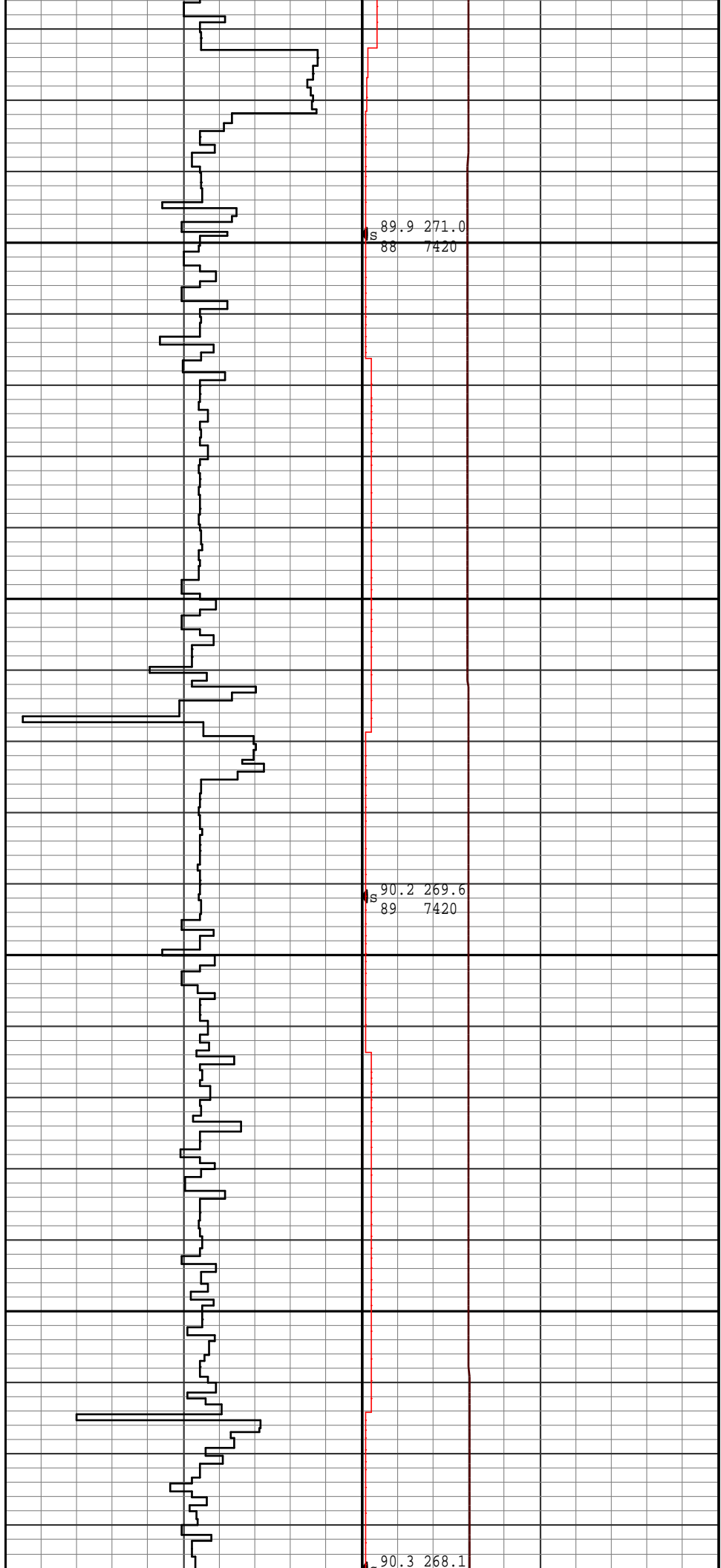
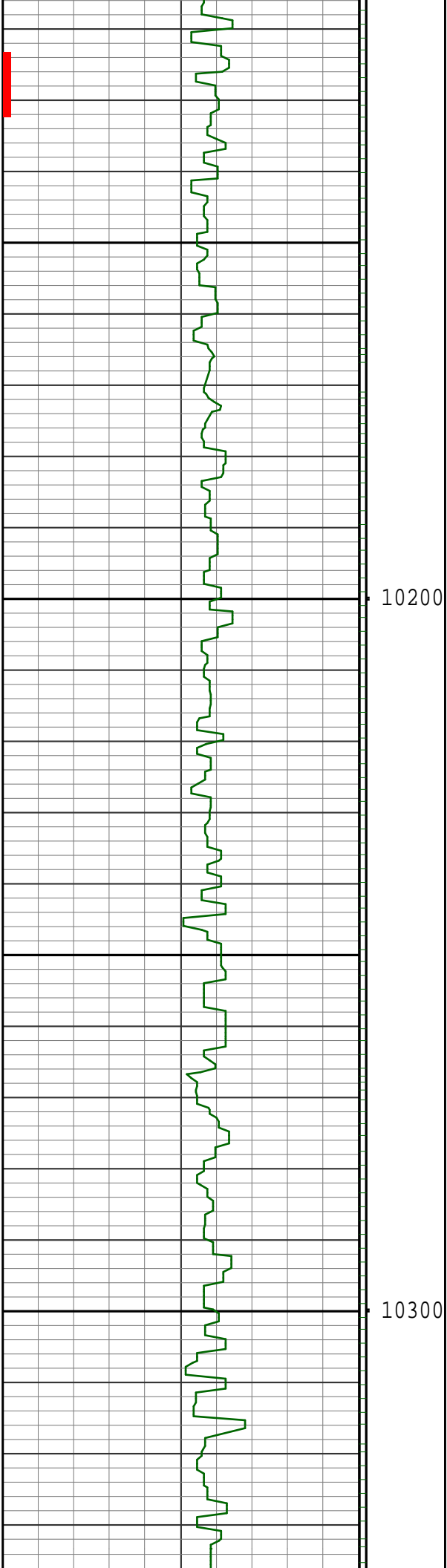


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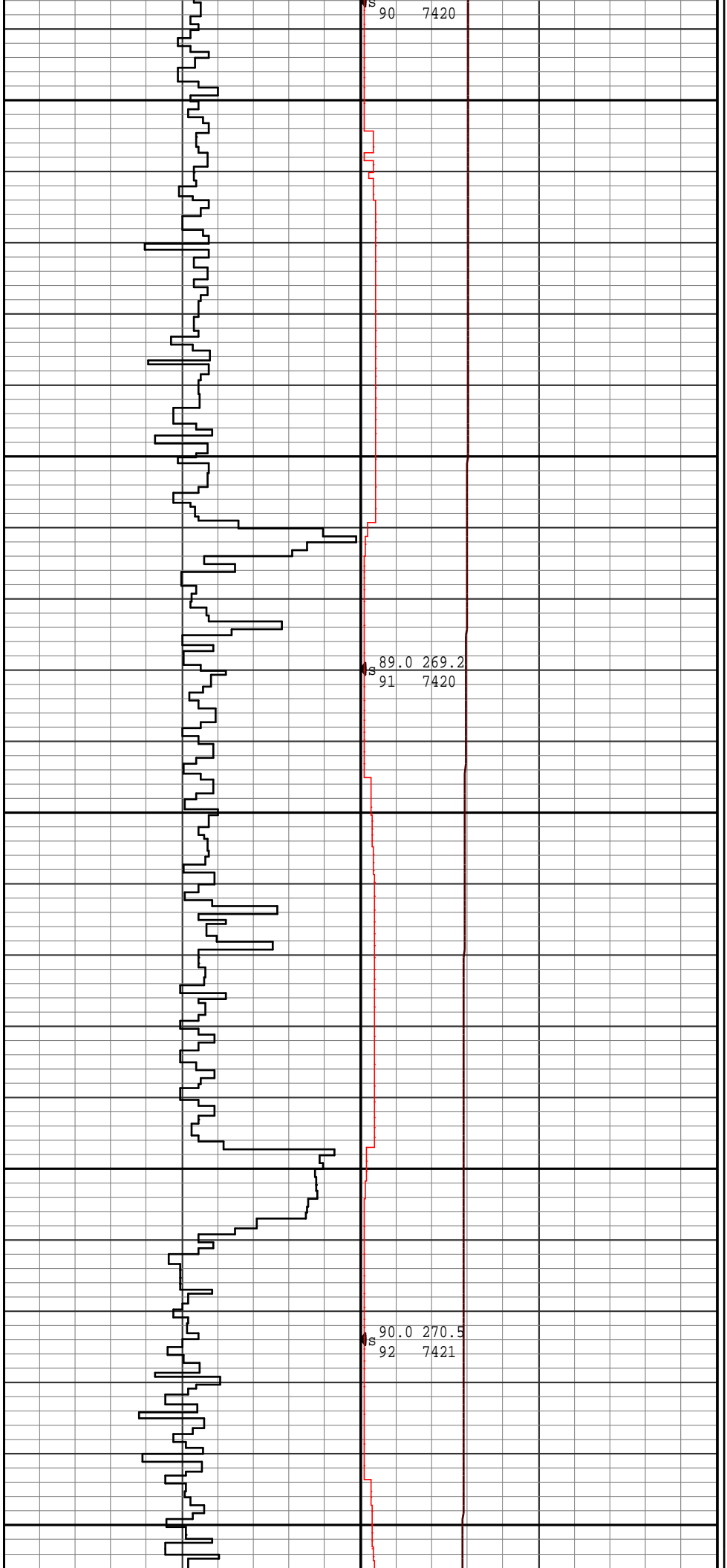
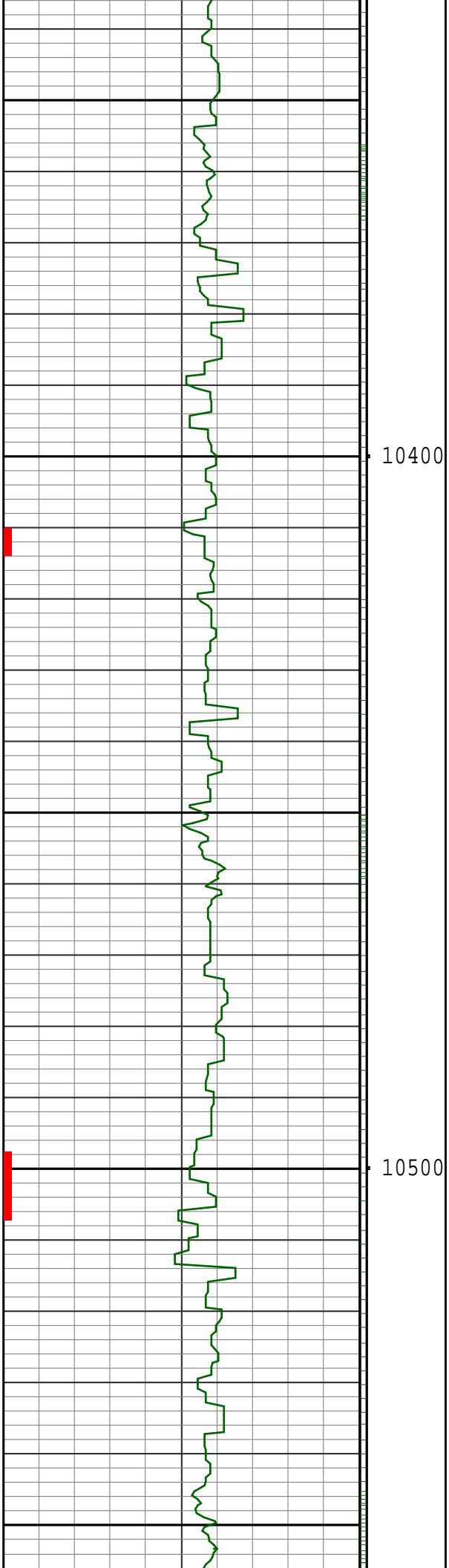
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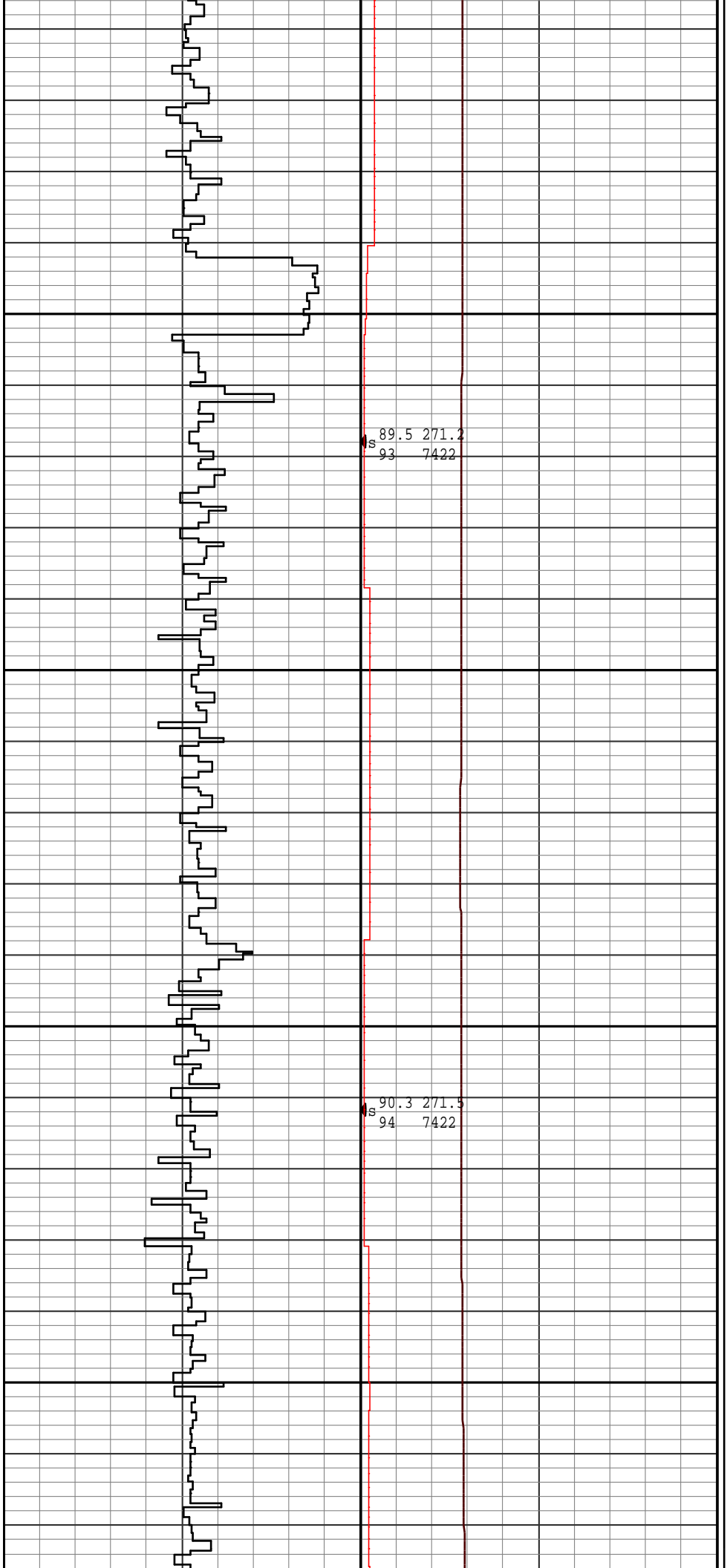
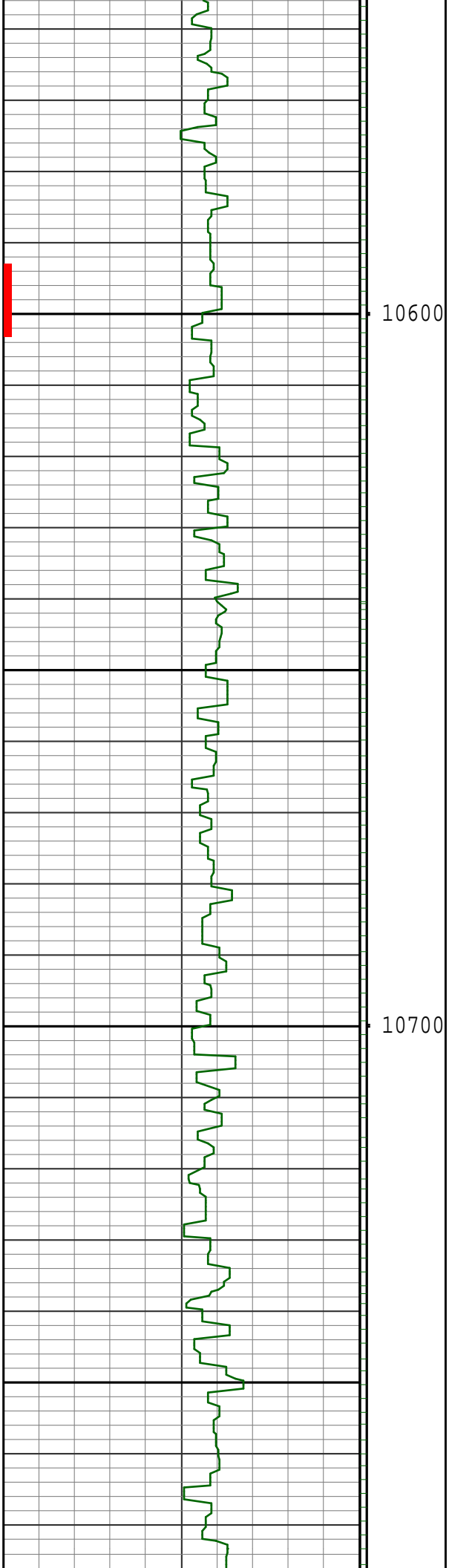


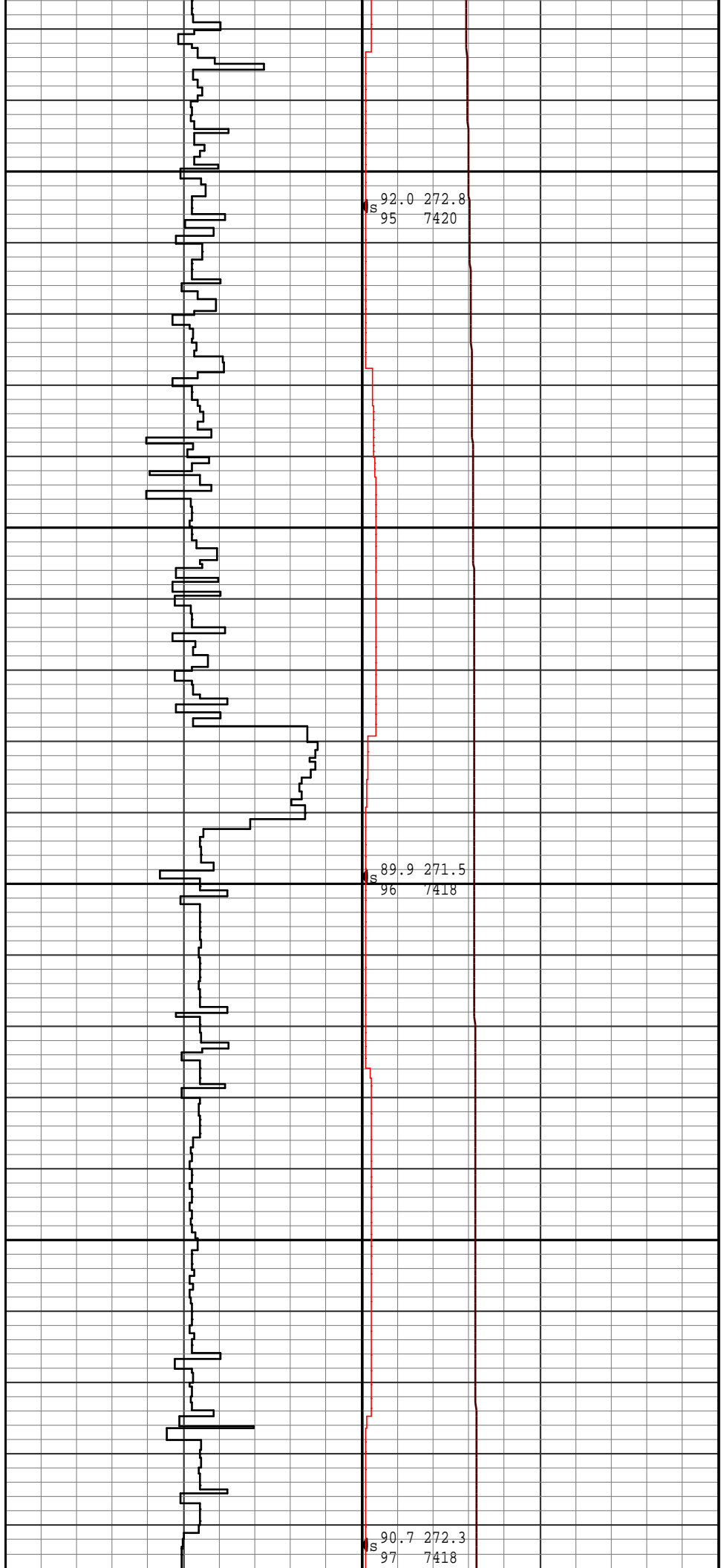
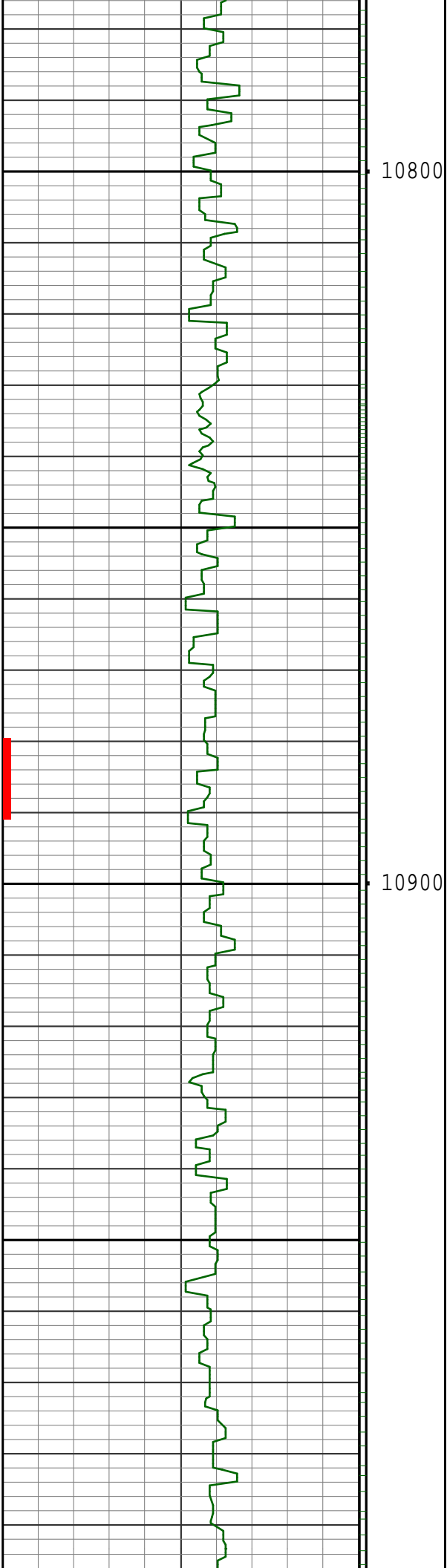


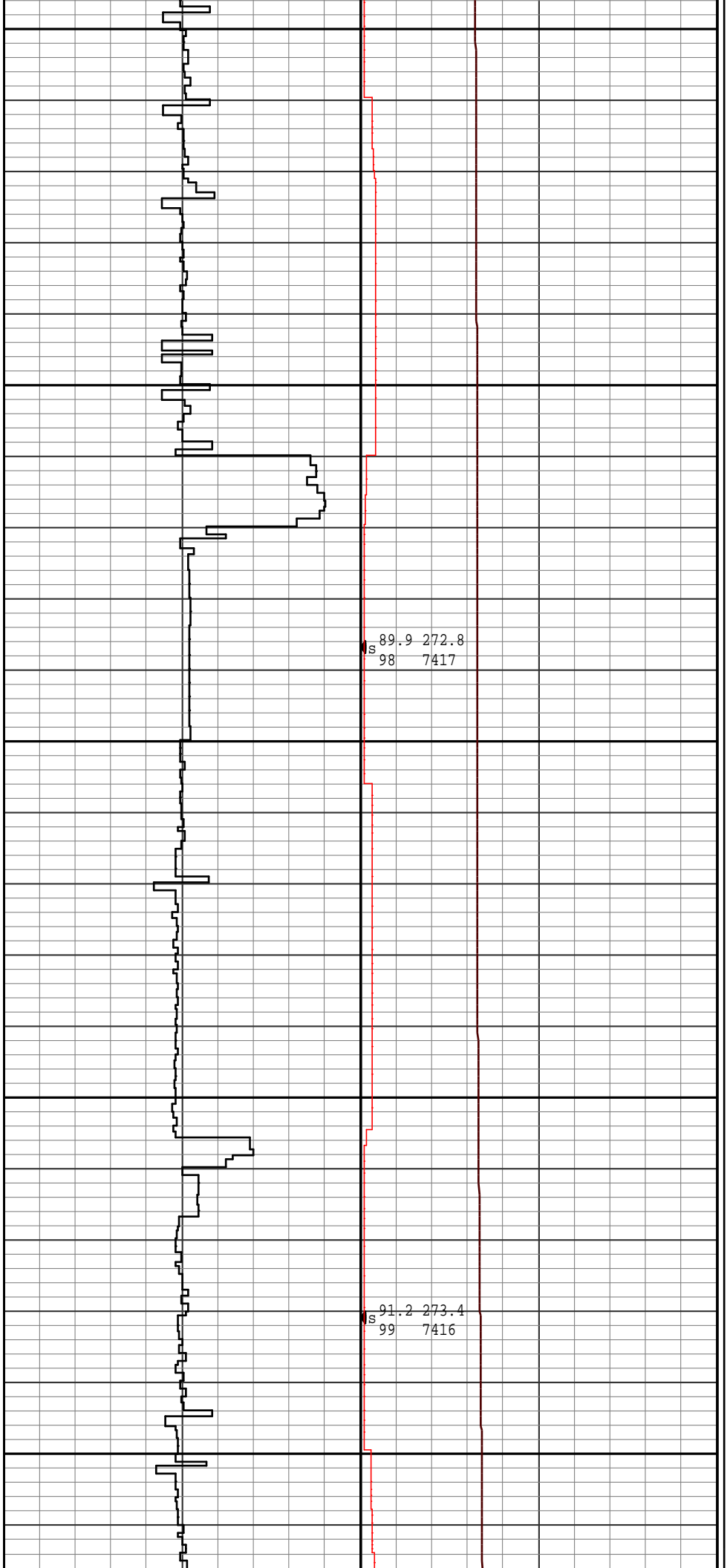
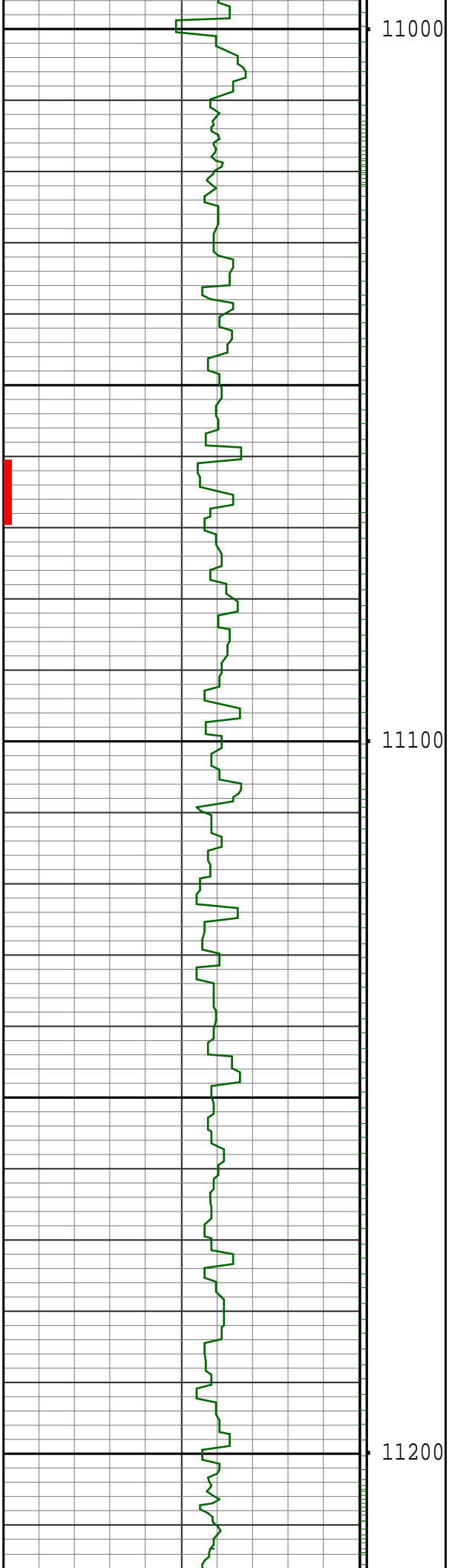


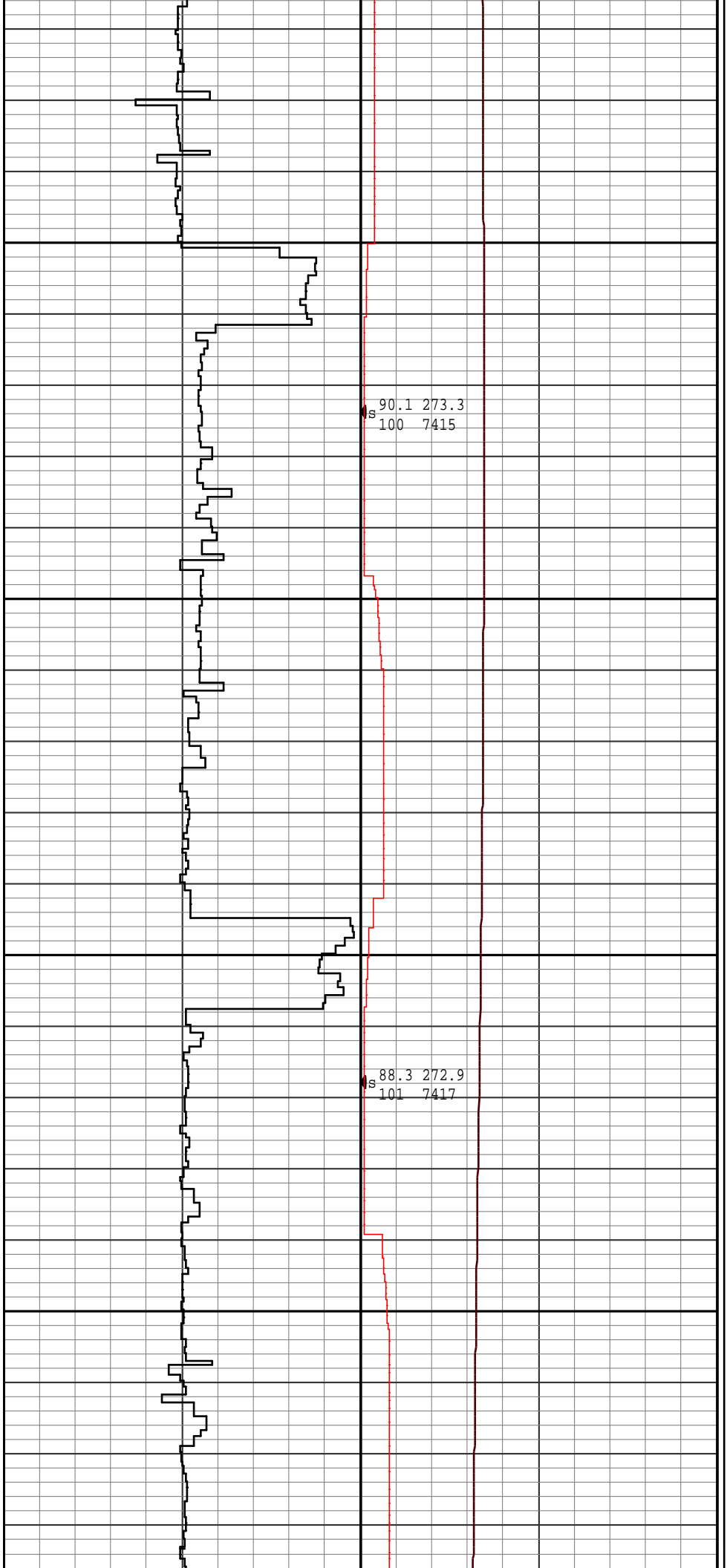
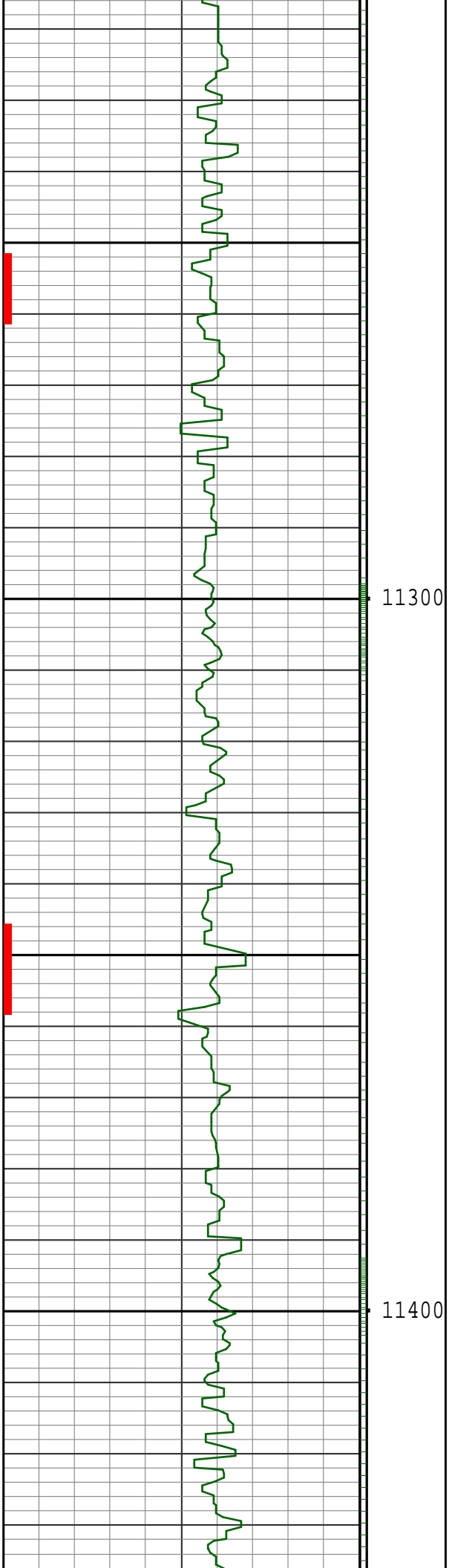


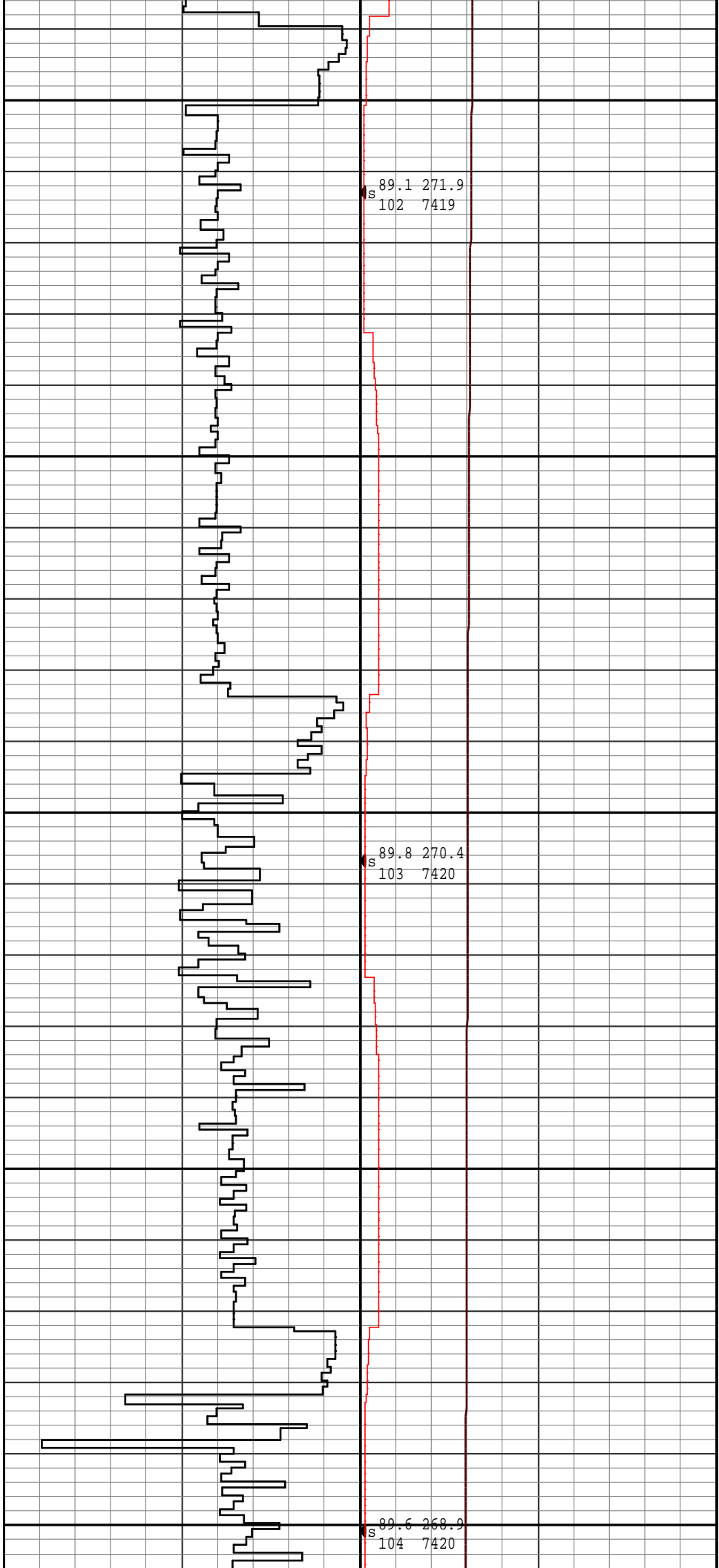
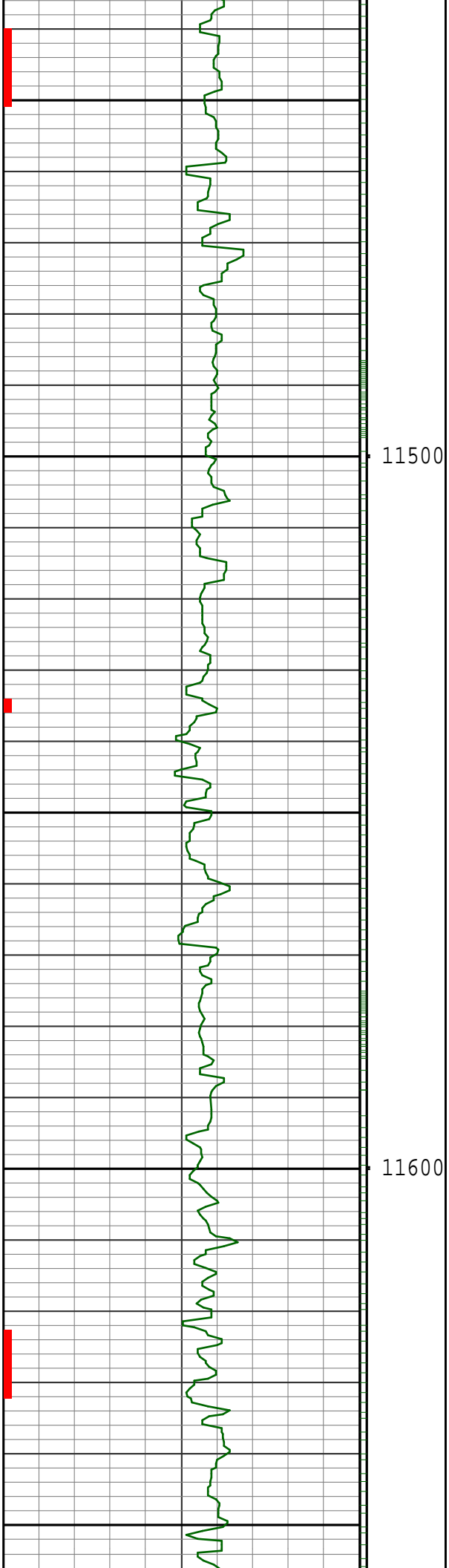


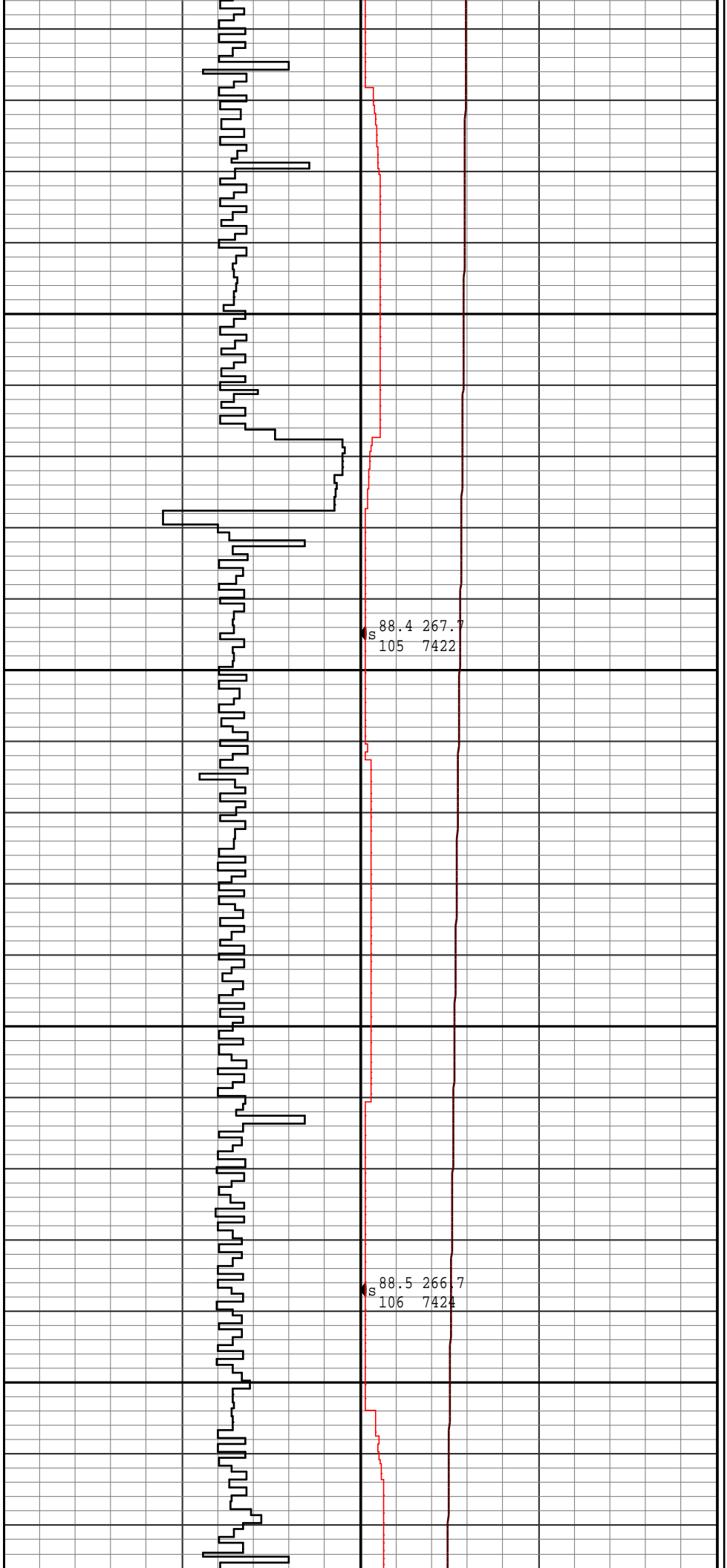
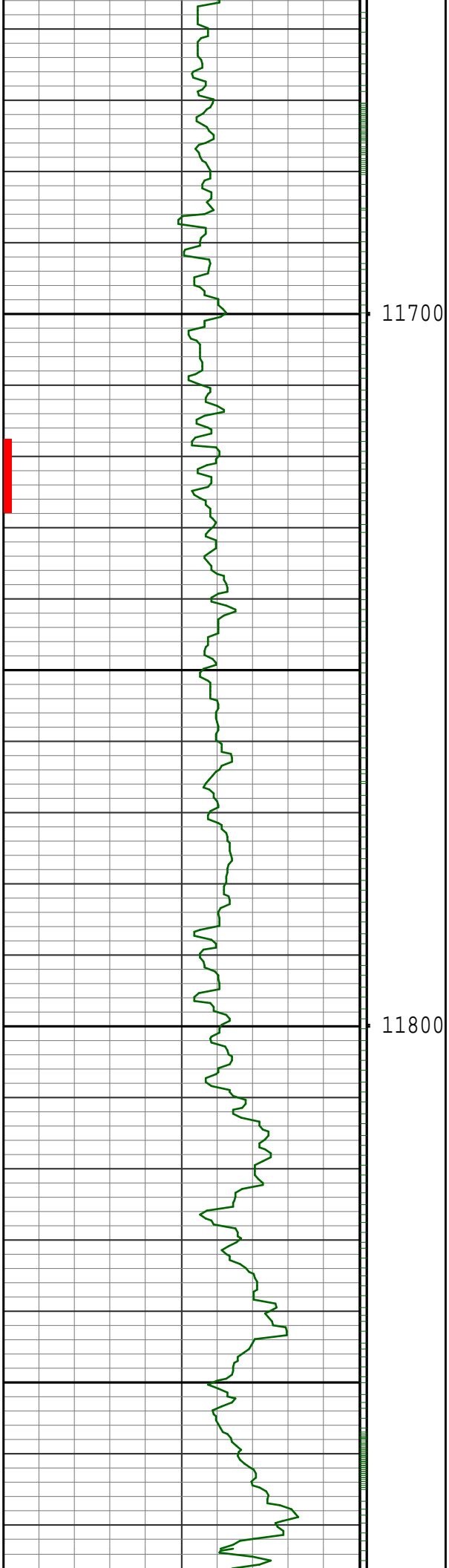


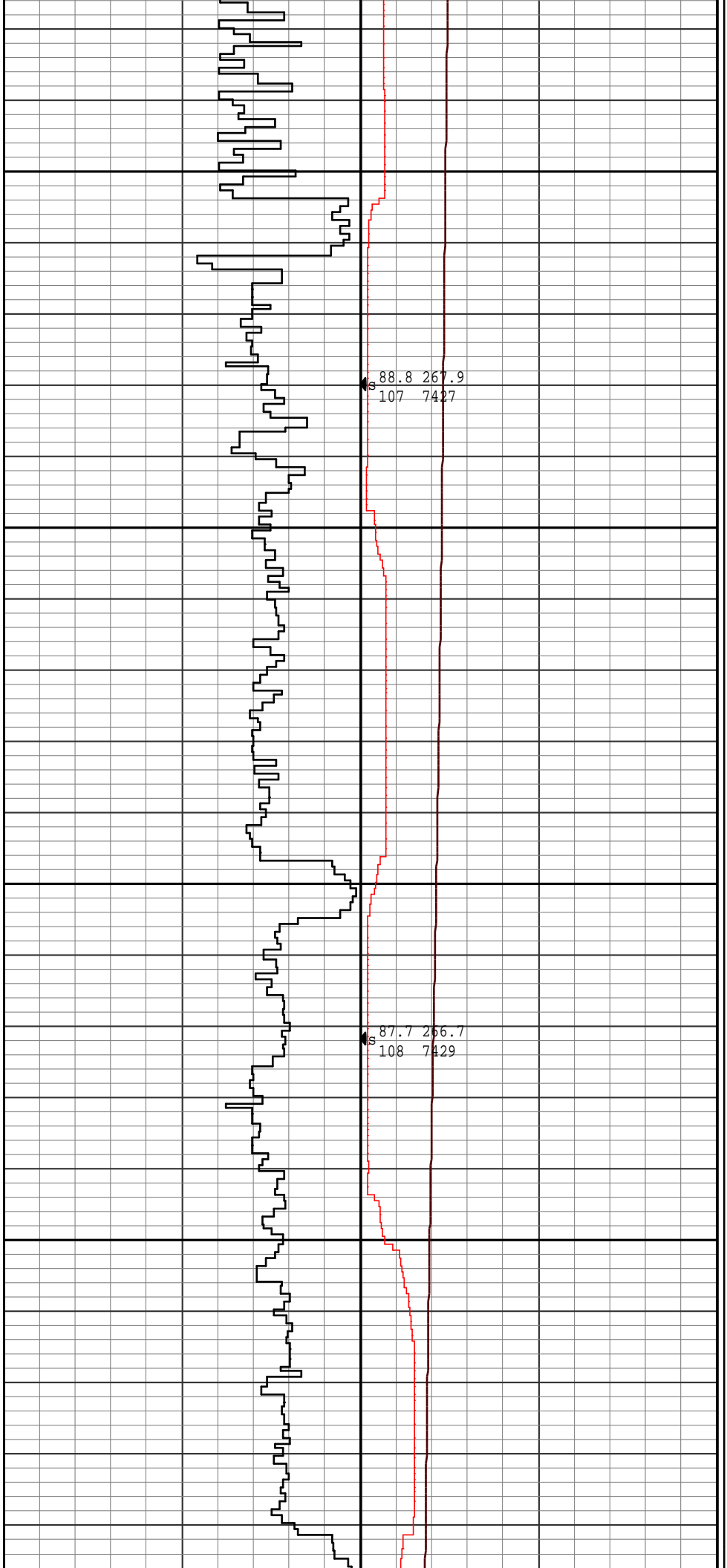
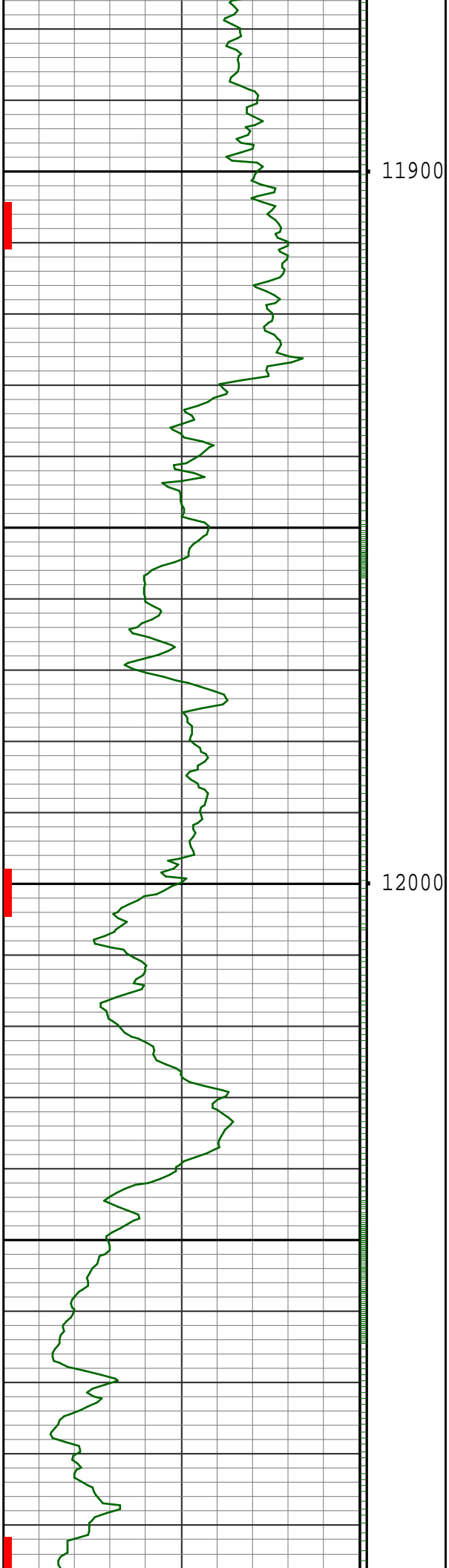




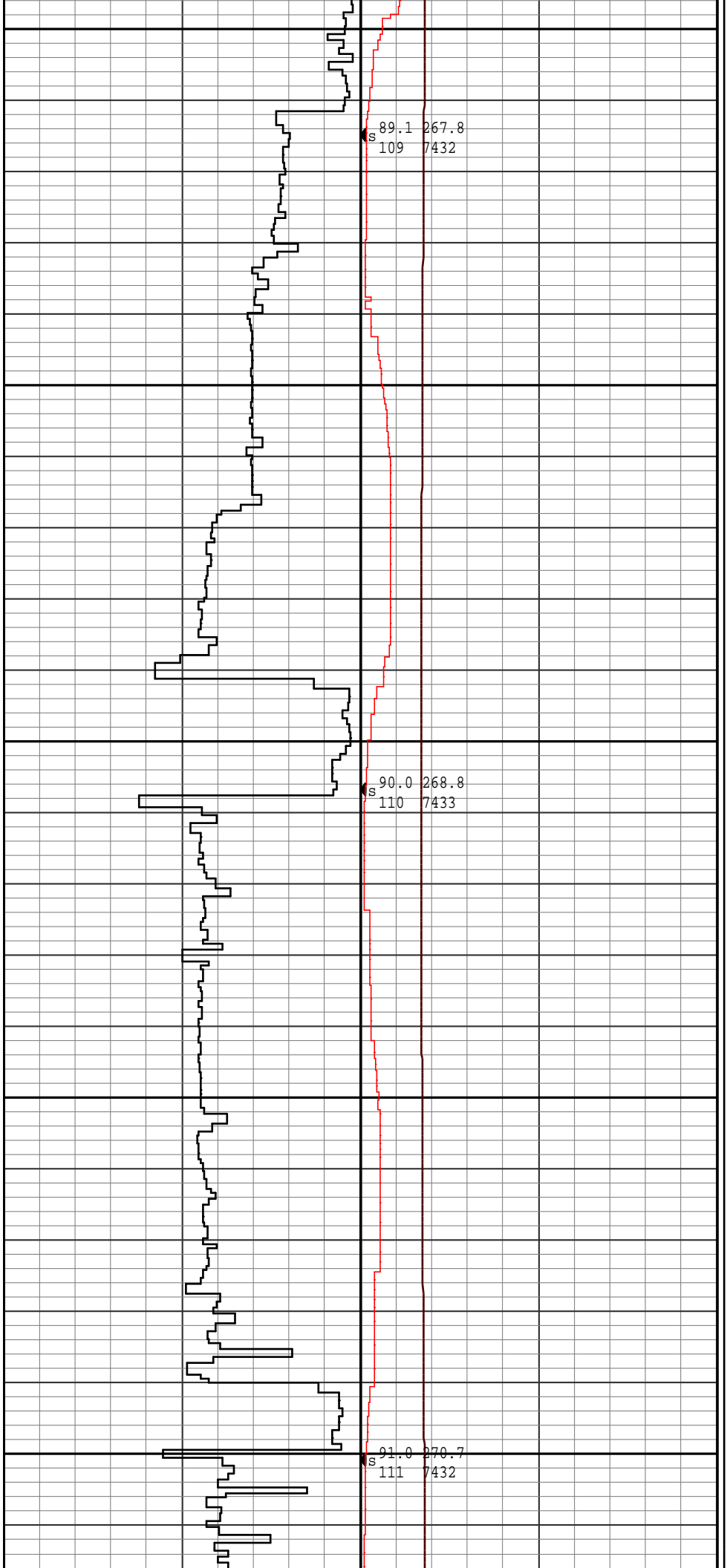
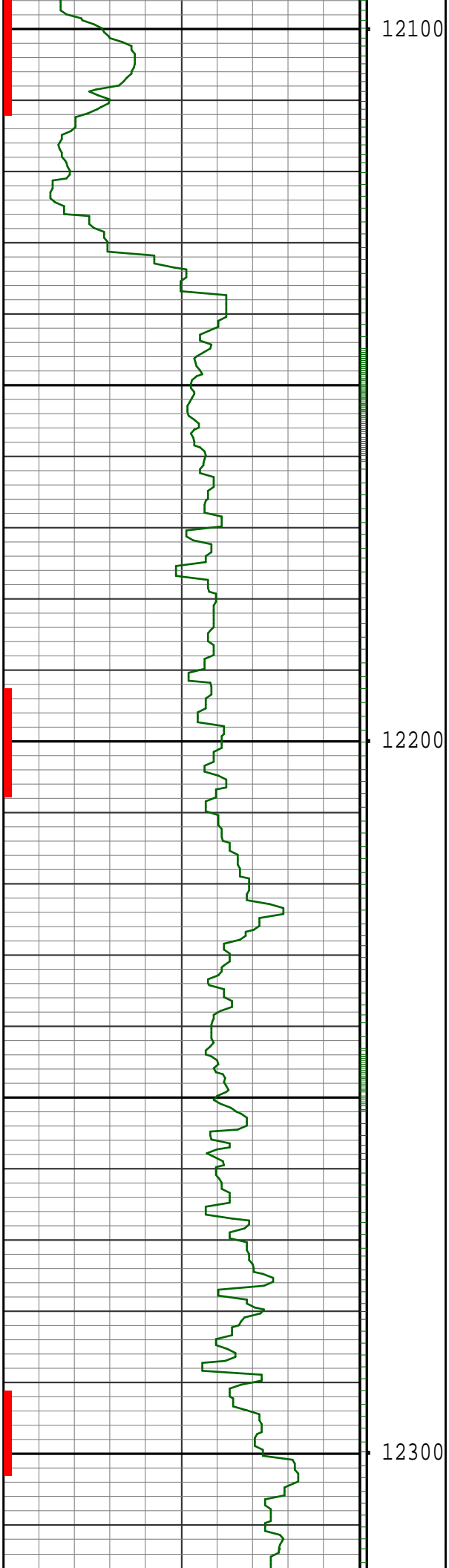


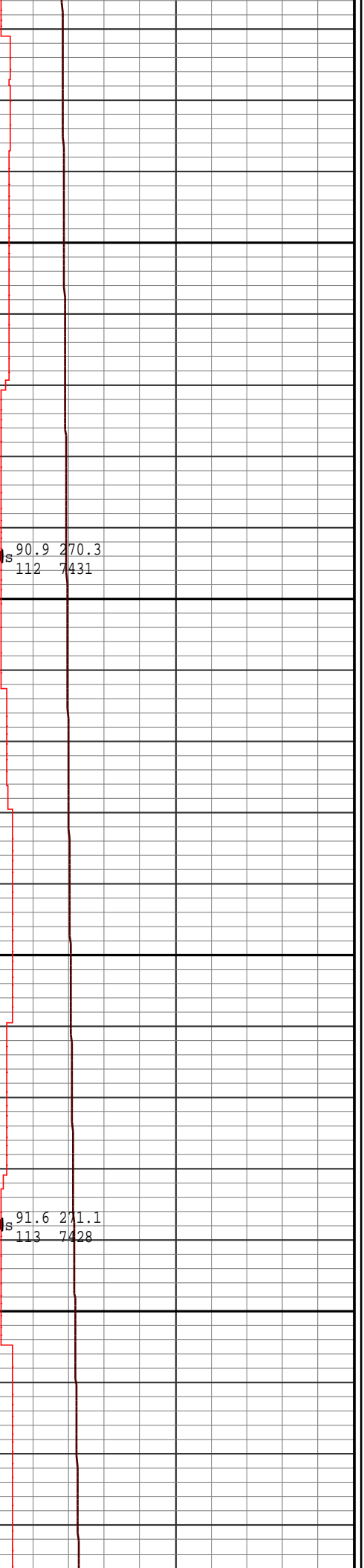
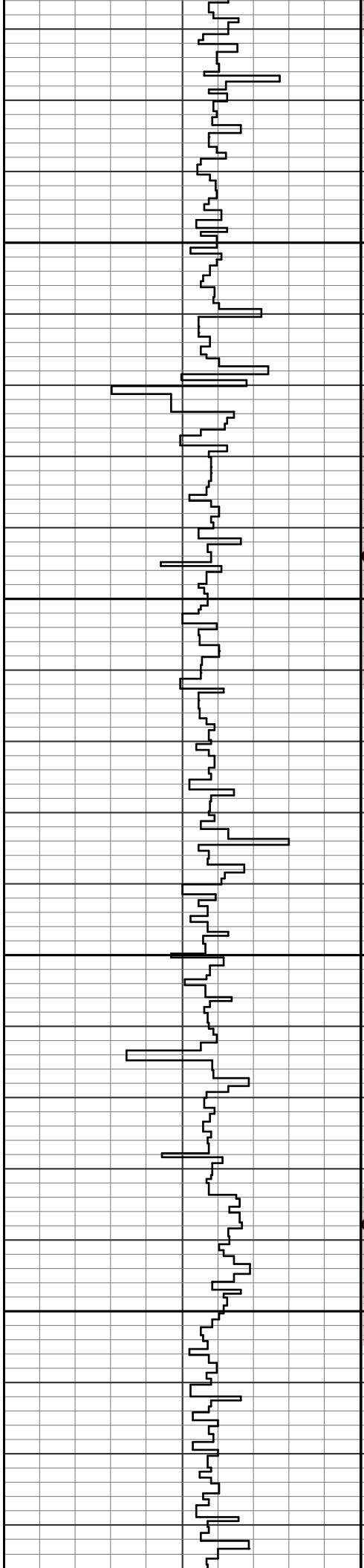
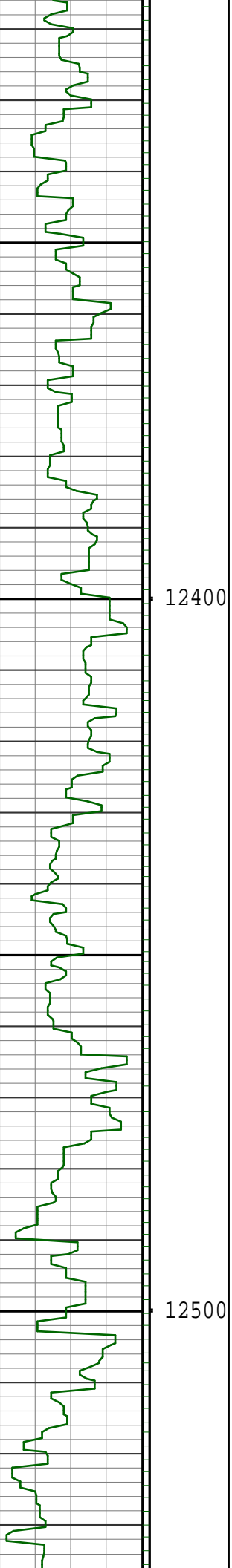


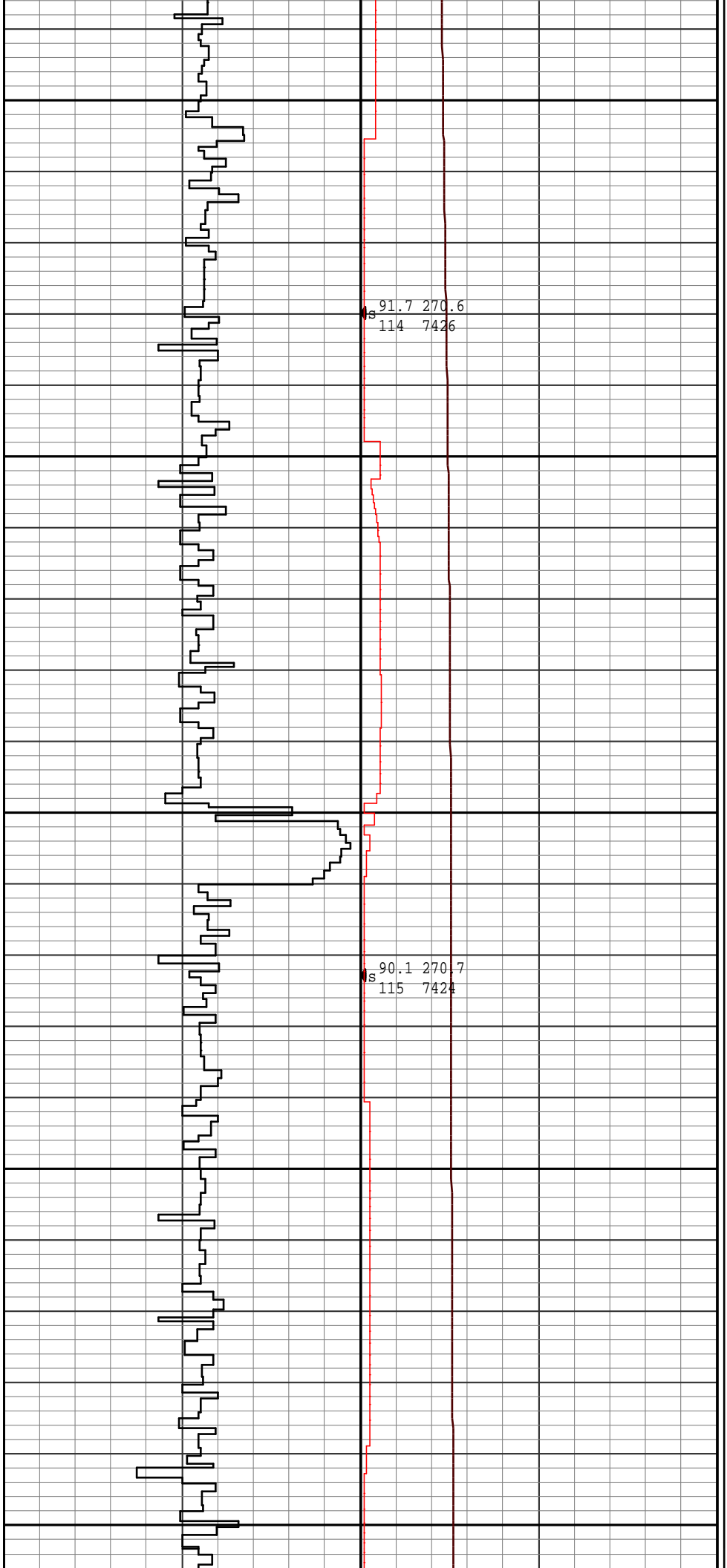
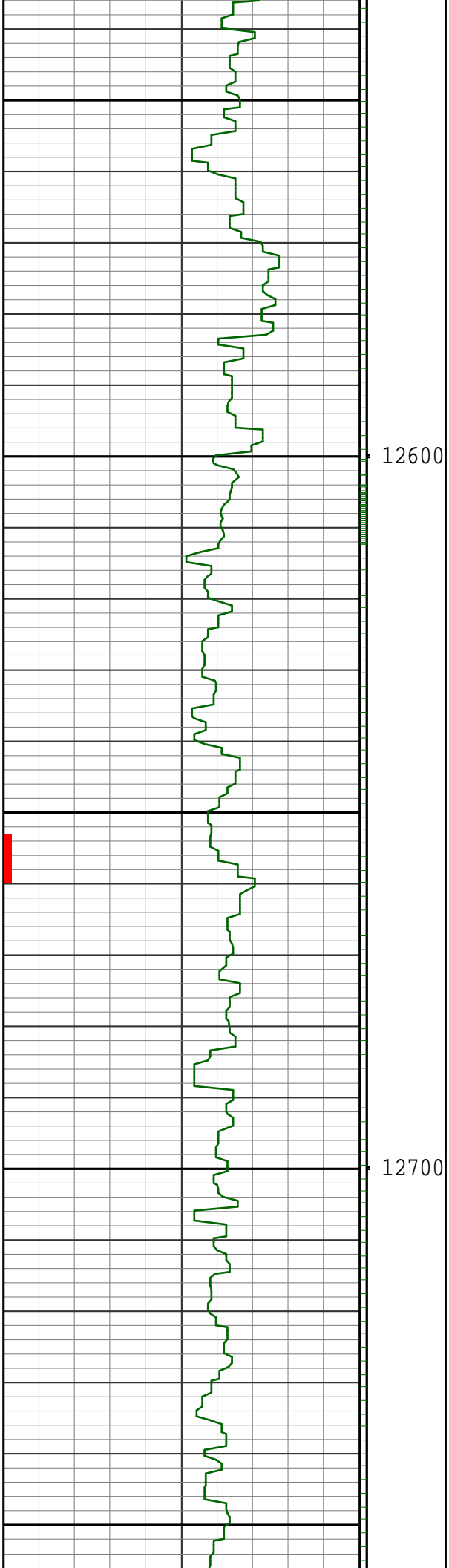


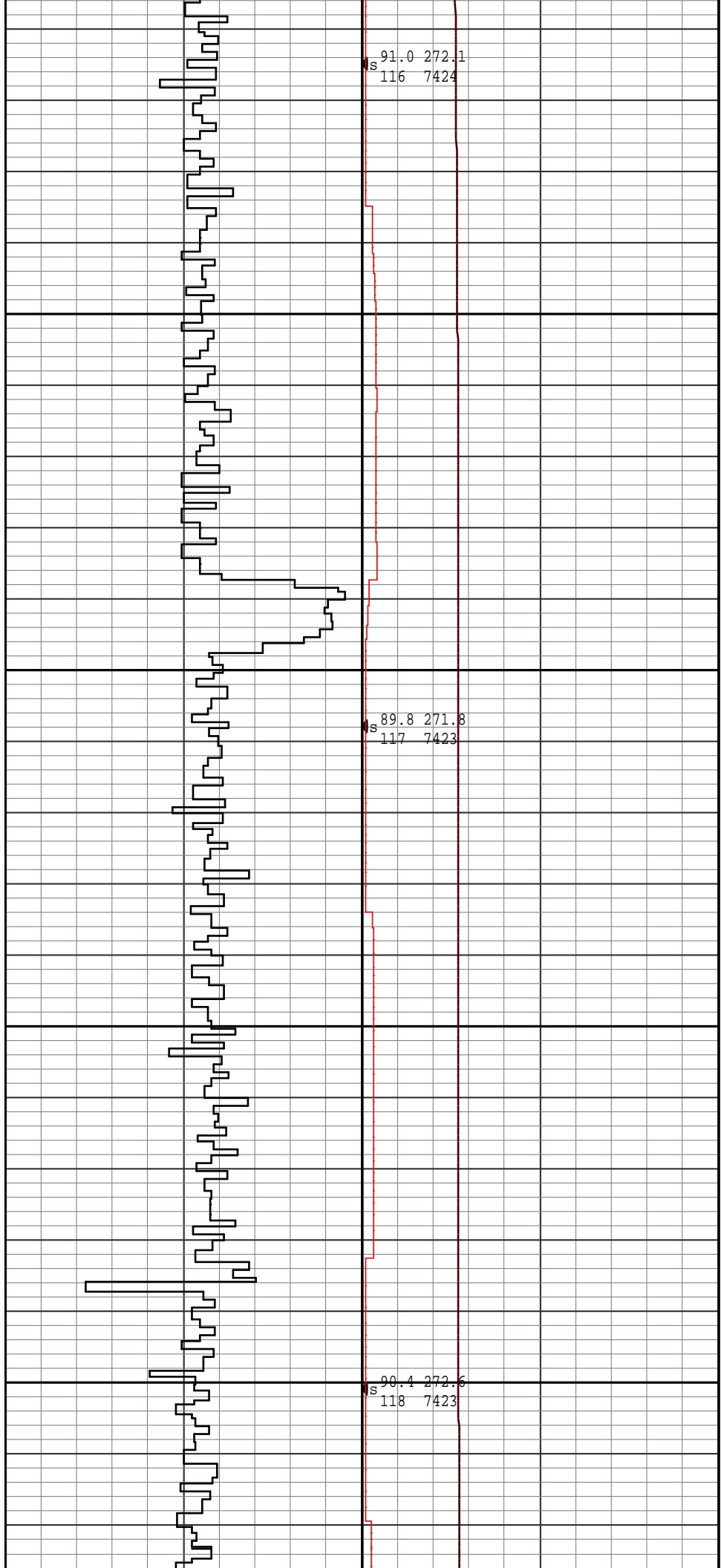
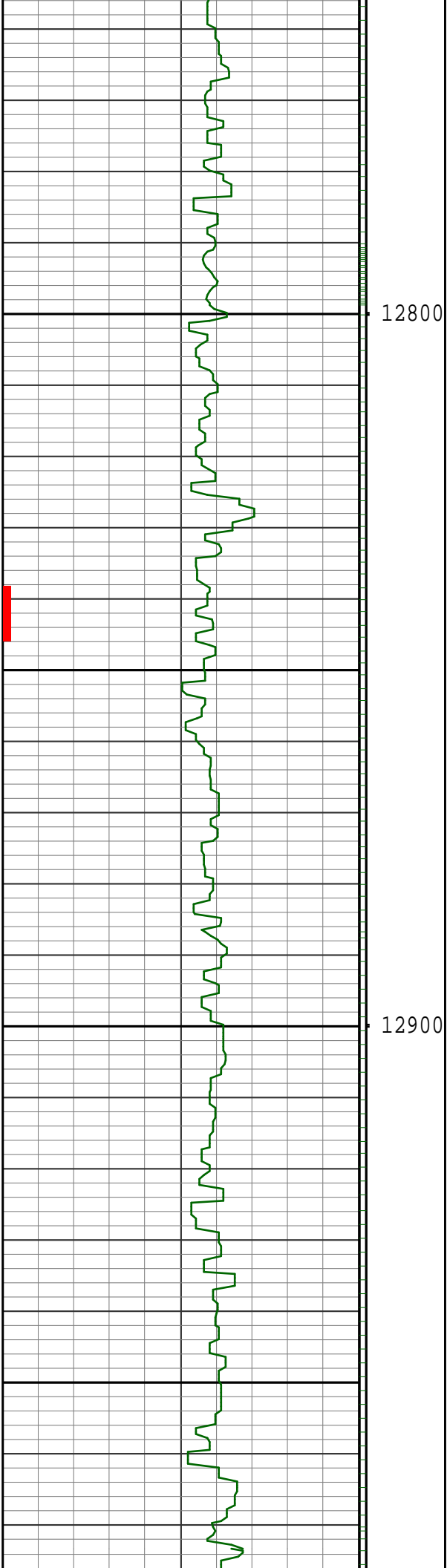


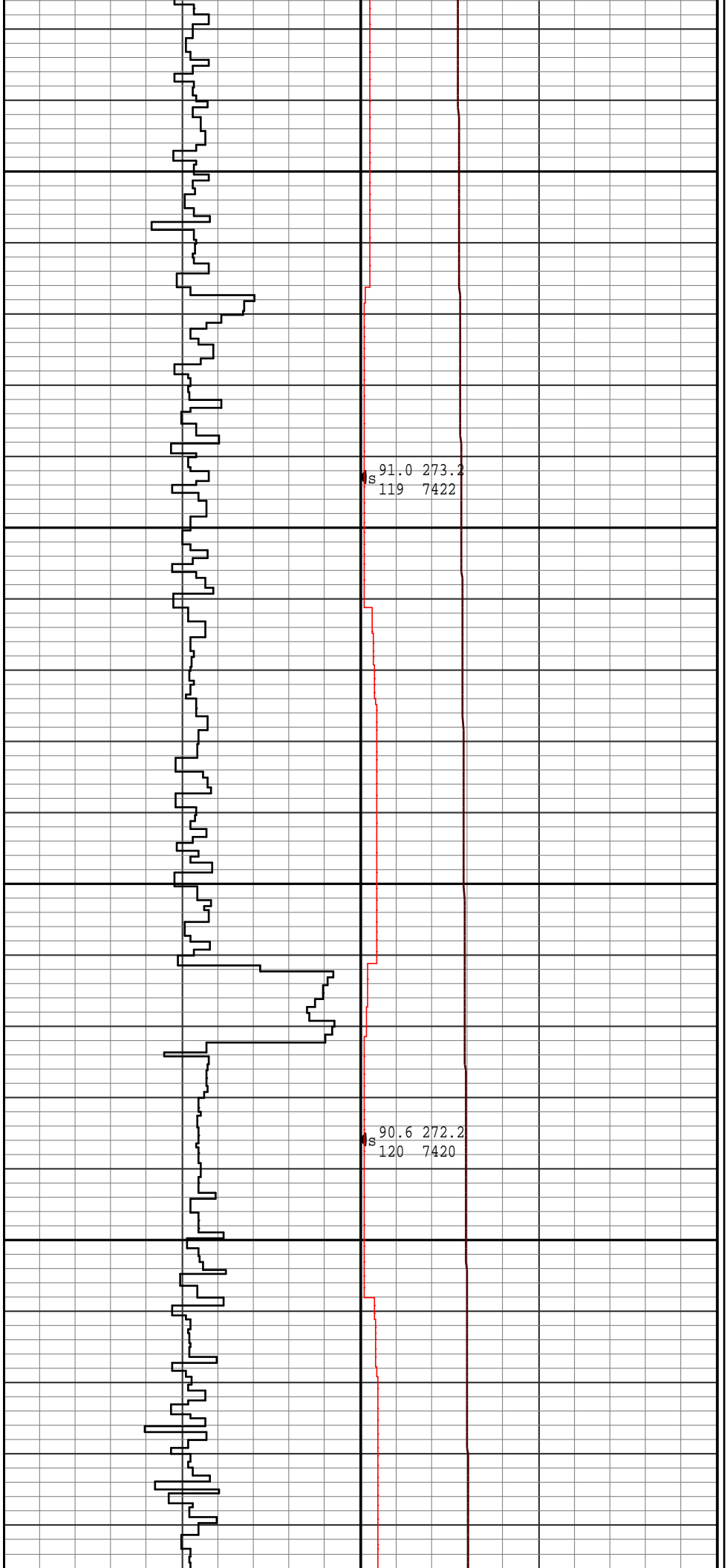
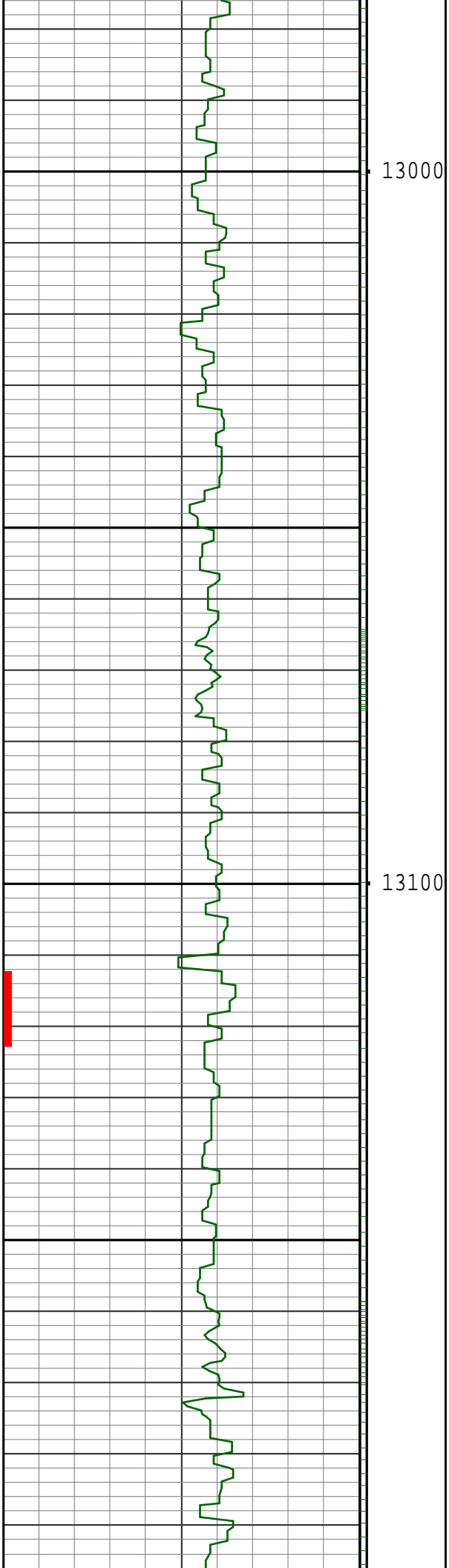


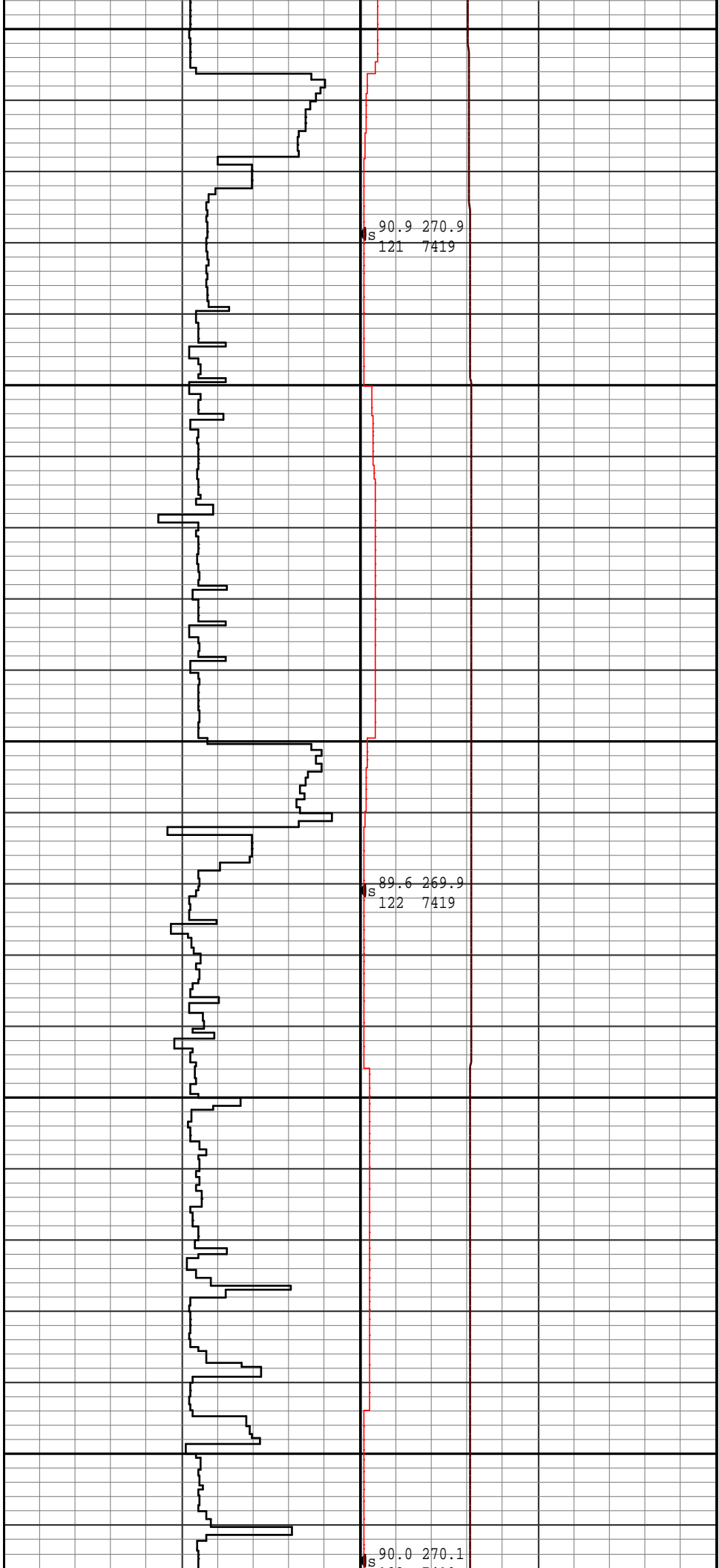
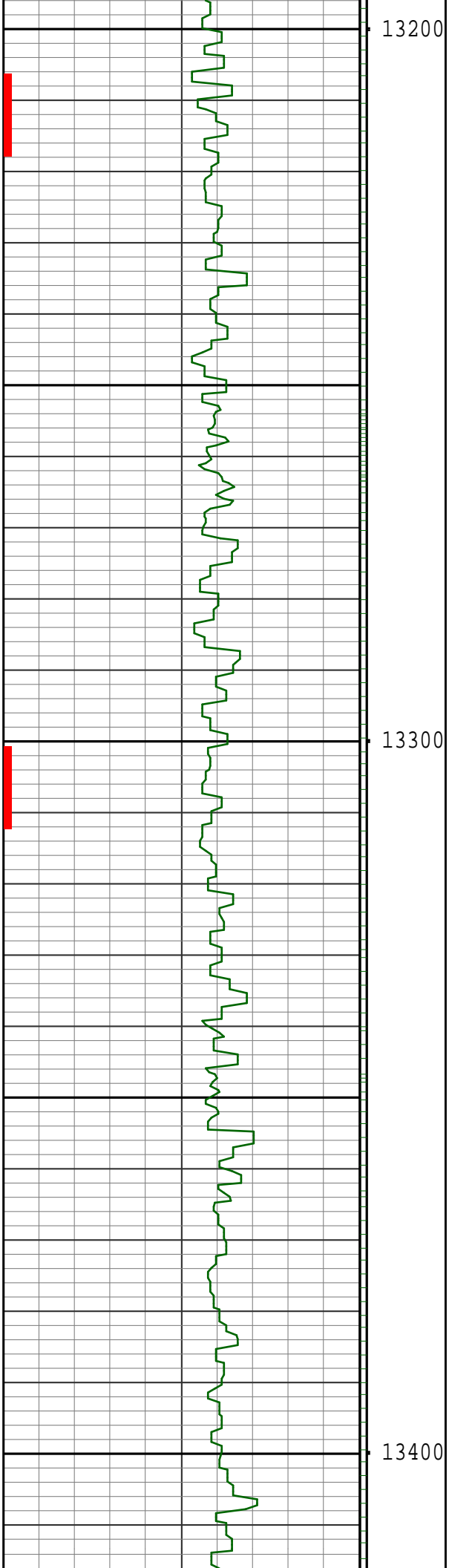


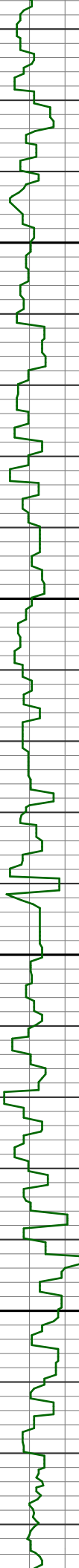






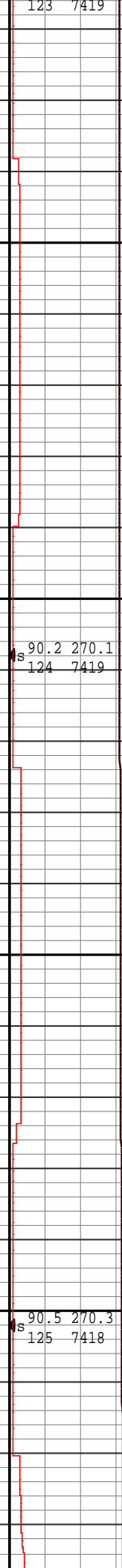
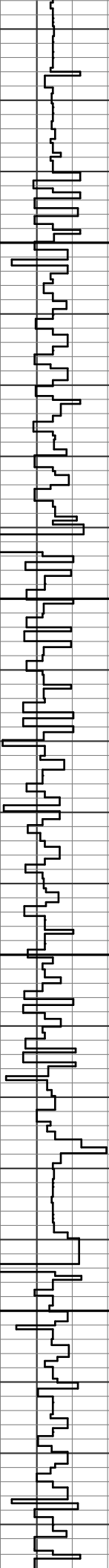






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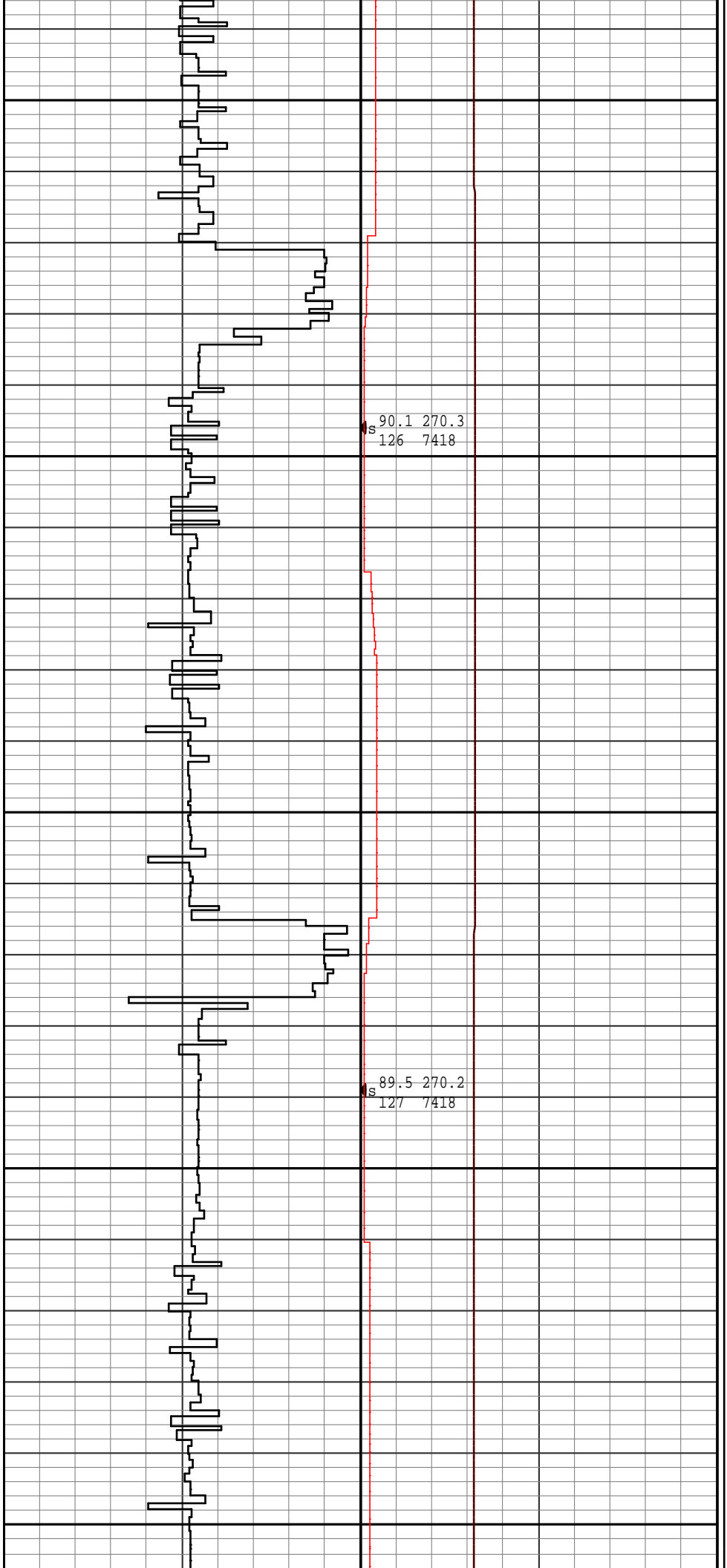
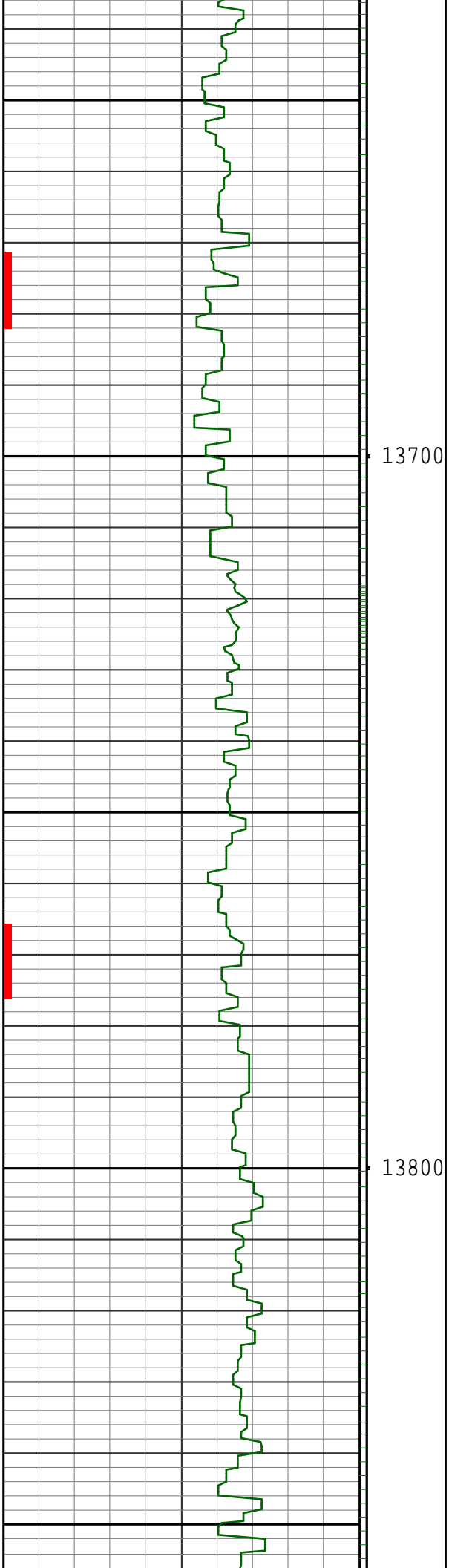
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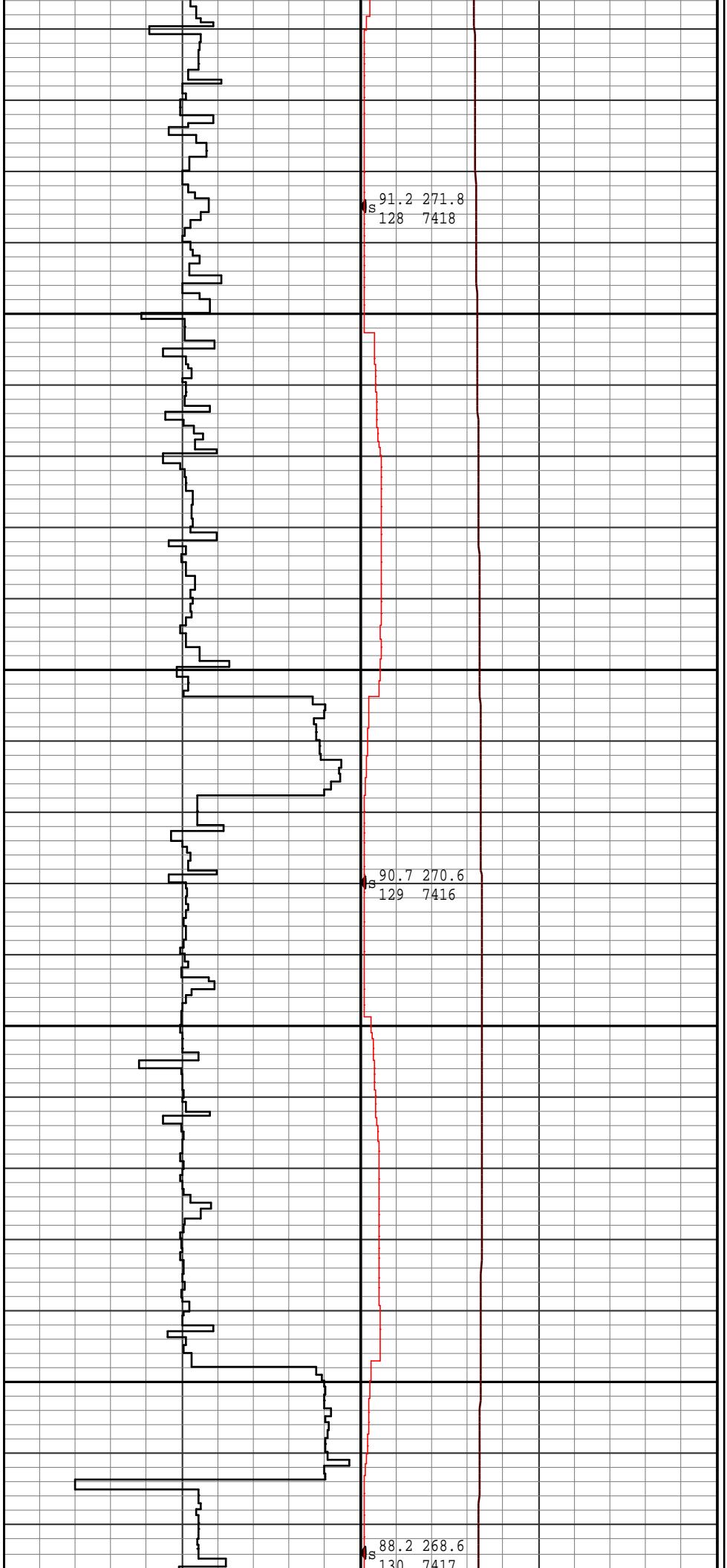
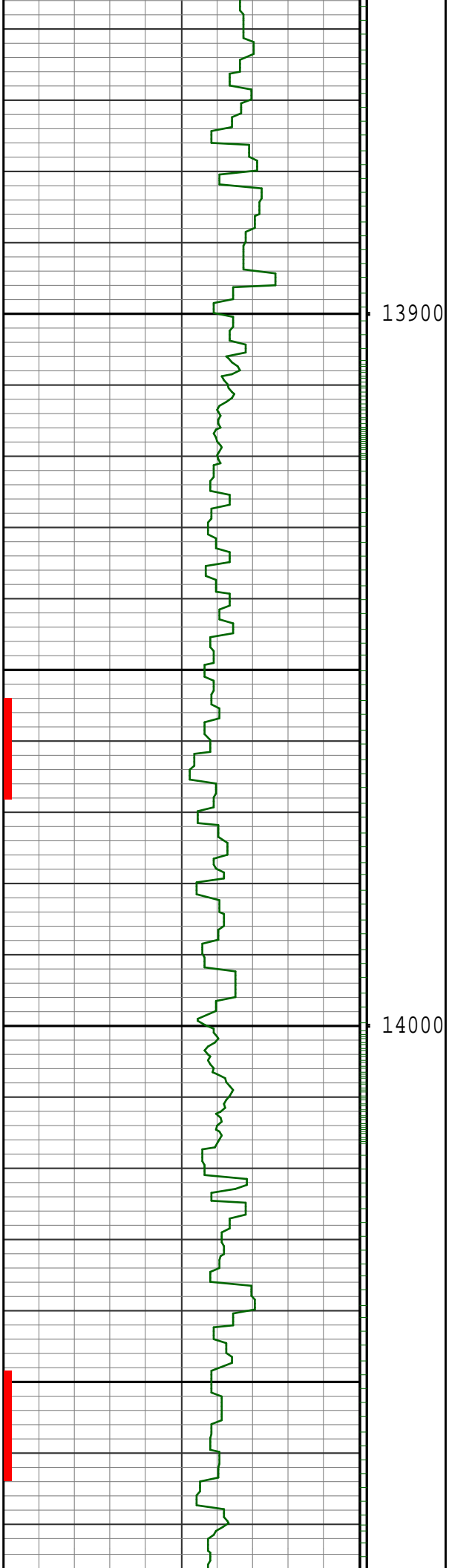
123 7419

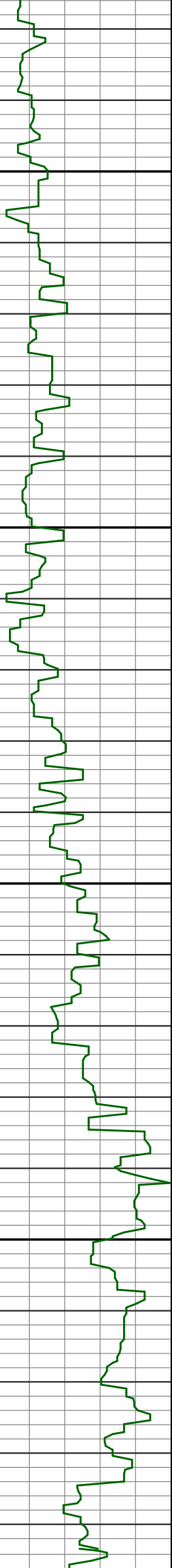
s 90.2 270.1  
124 7419

s 90.5 270.3  
125 7418



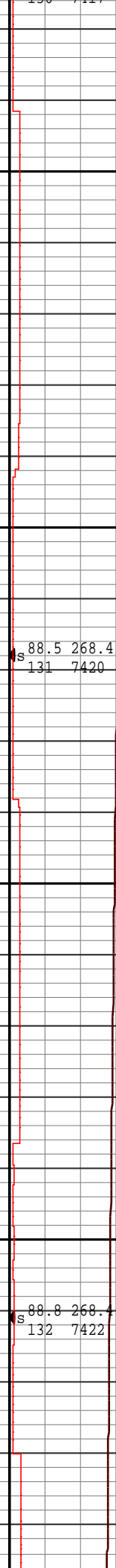
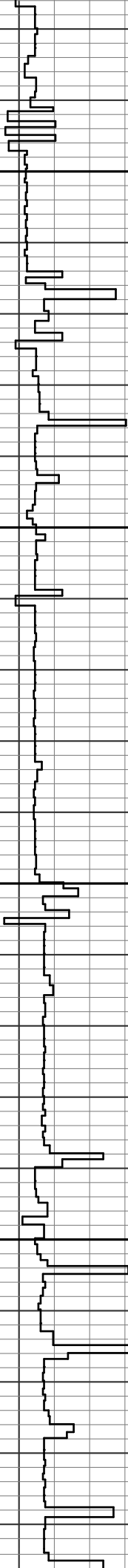






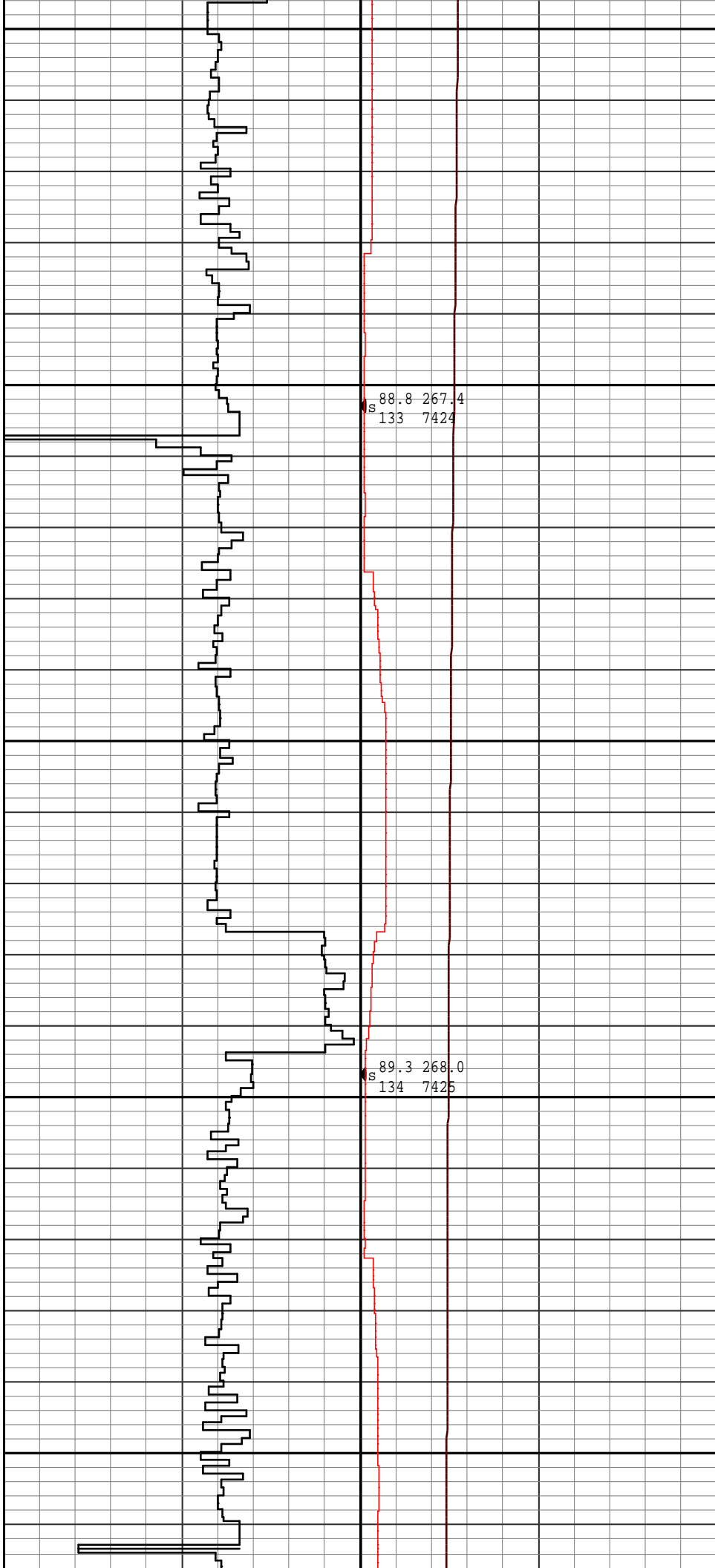
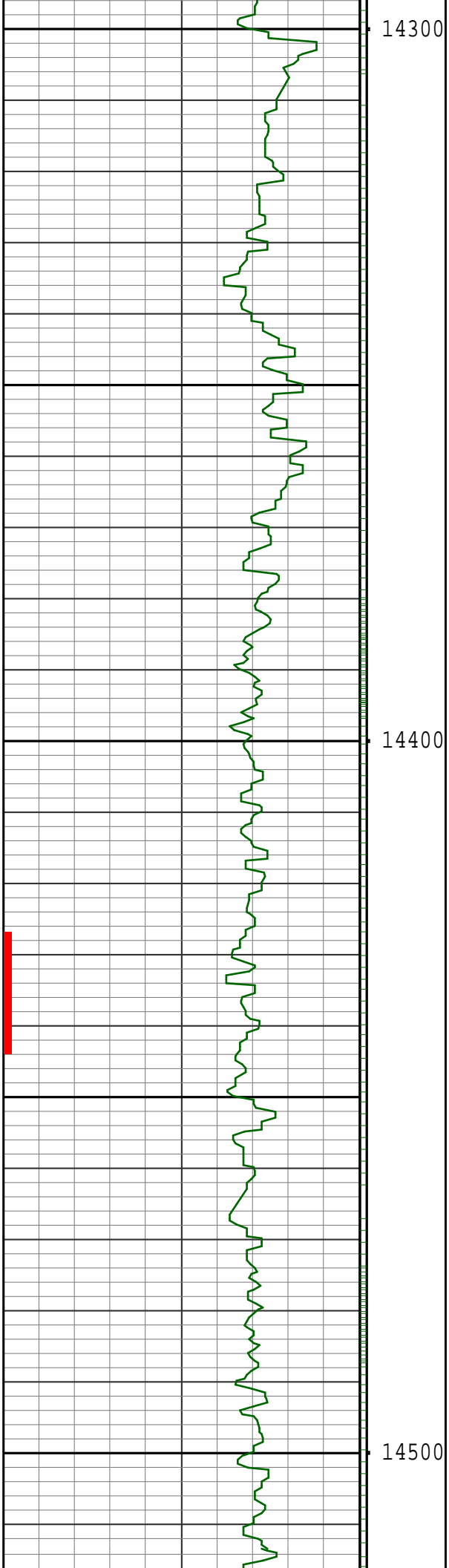
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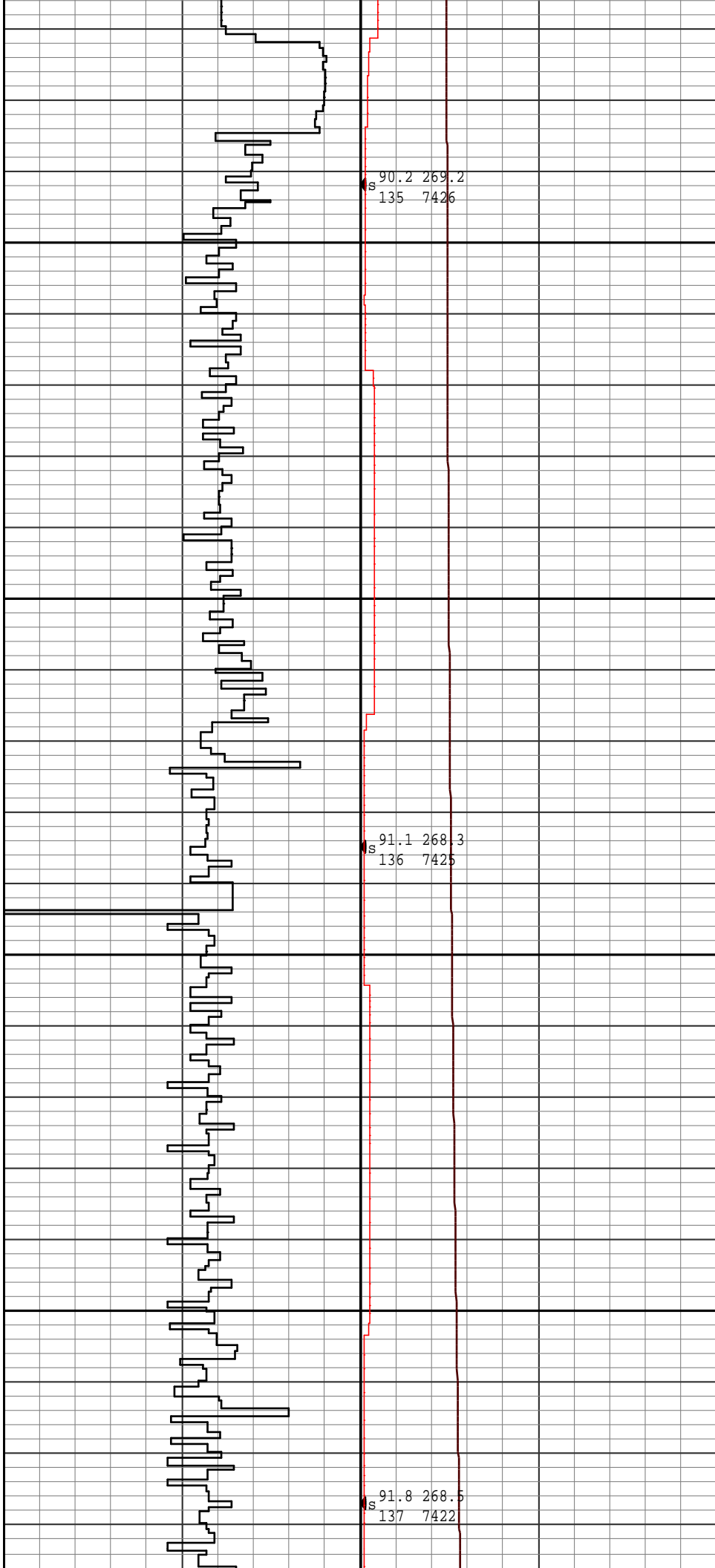
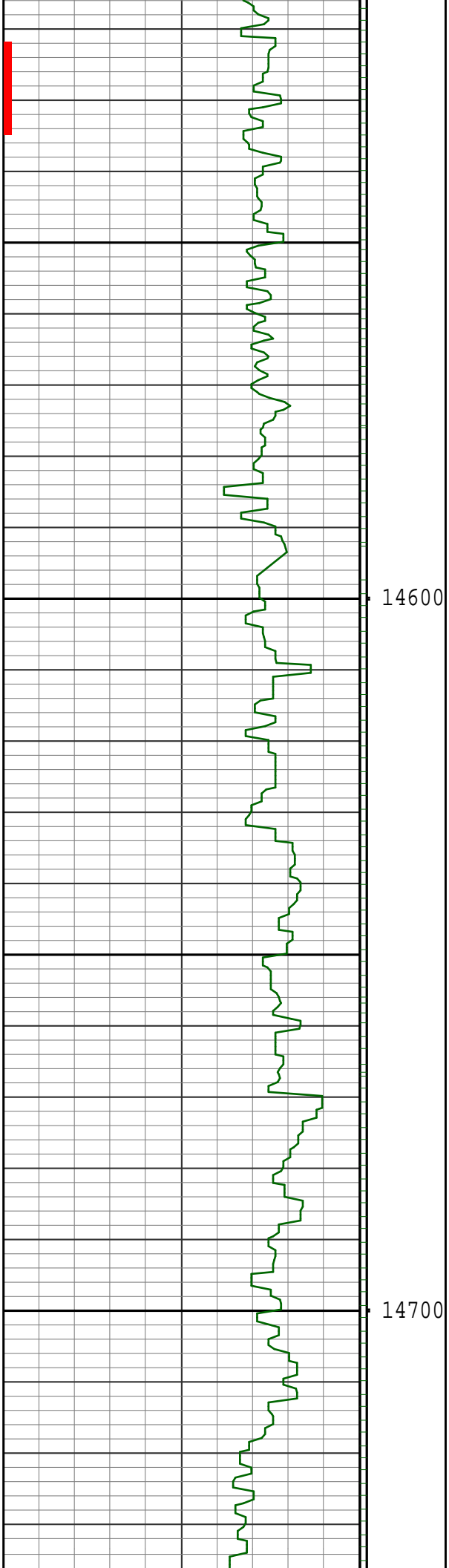
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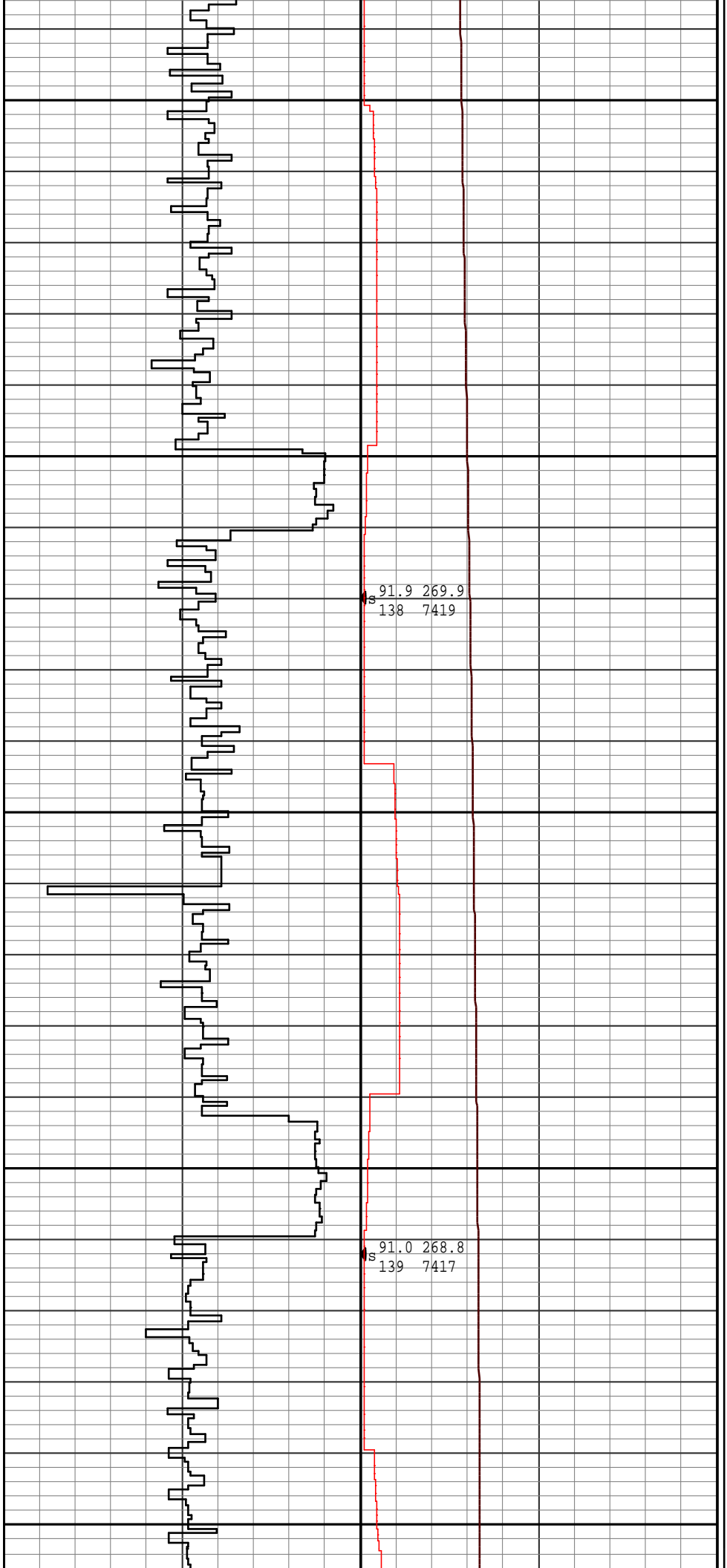
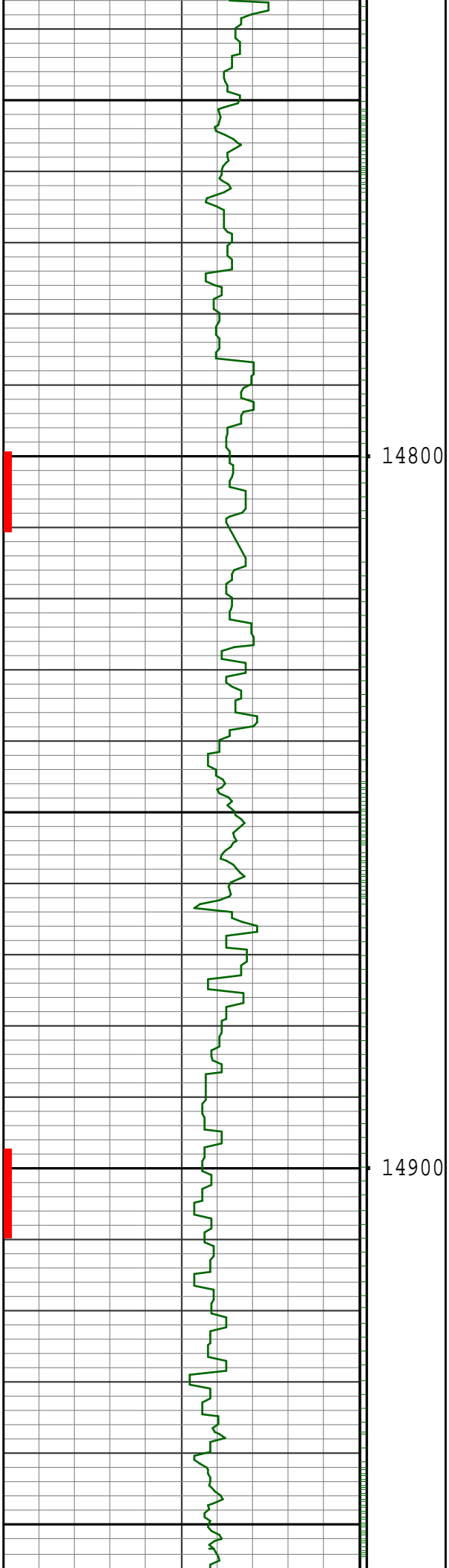


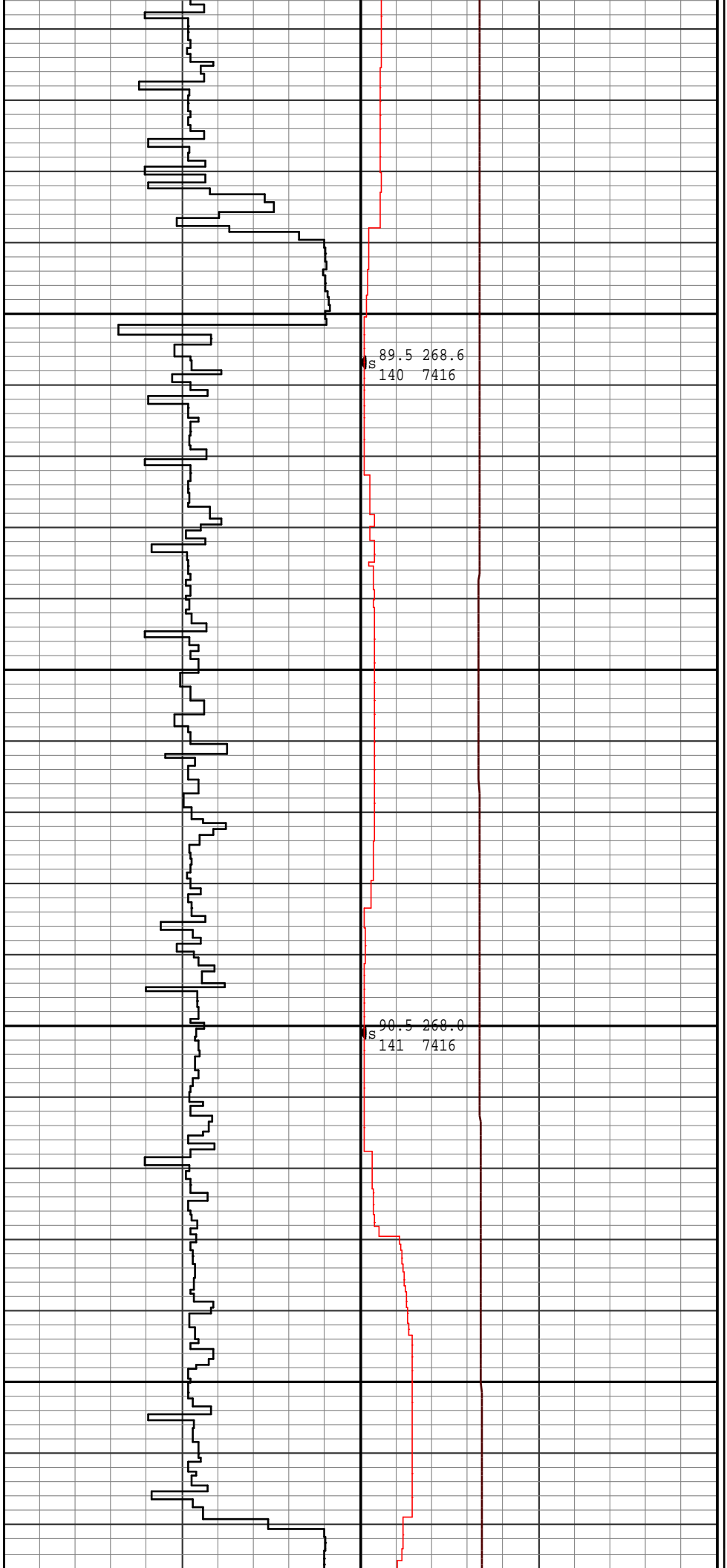
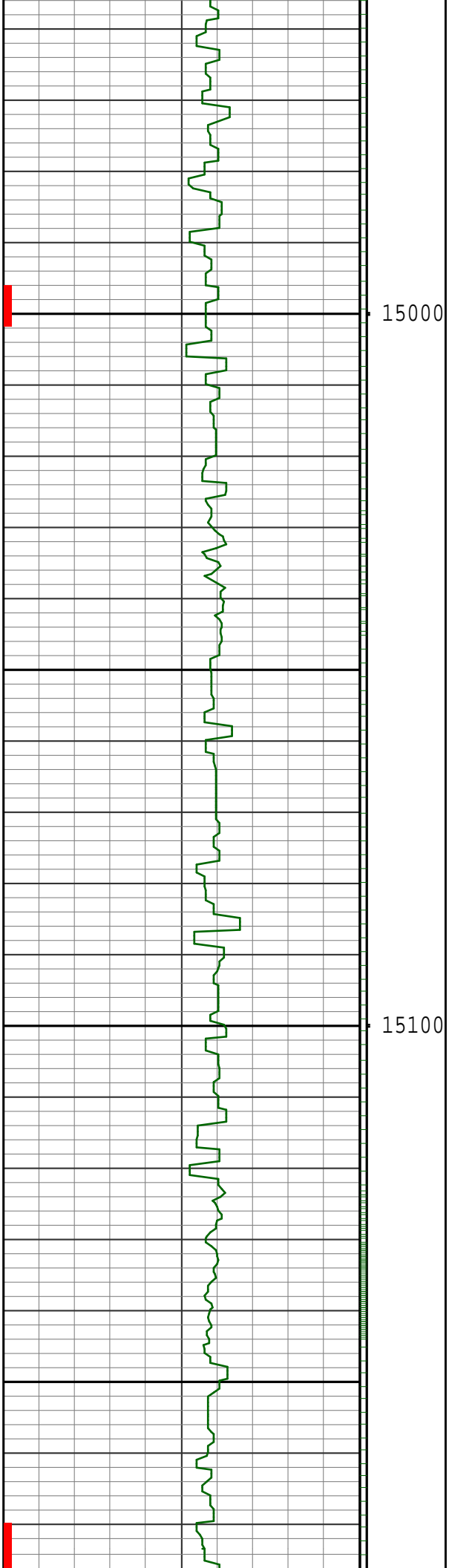
88.5 268.4  
131 7420

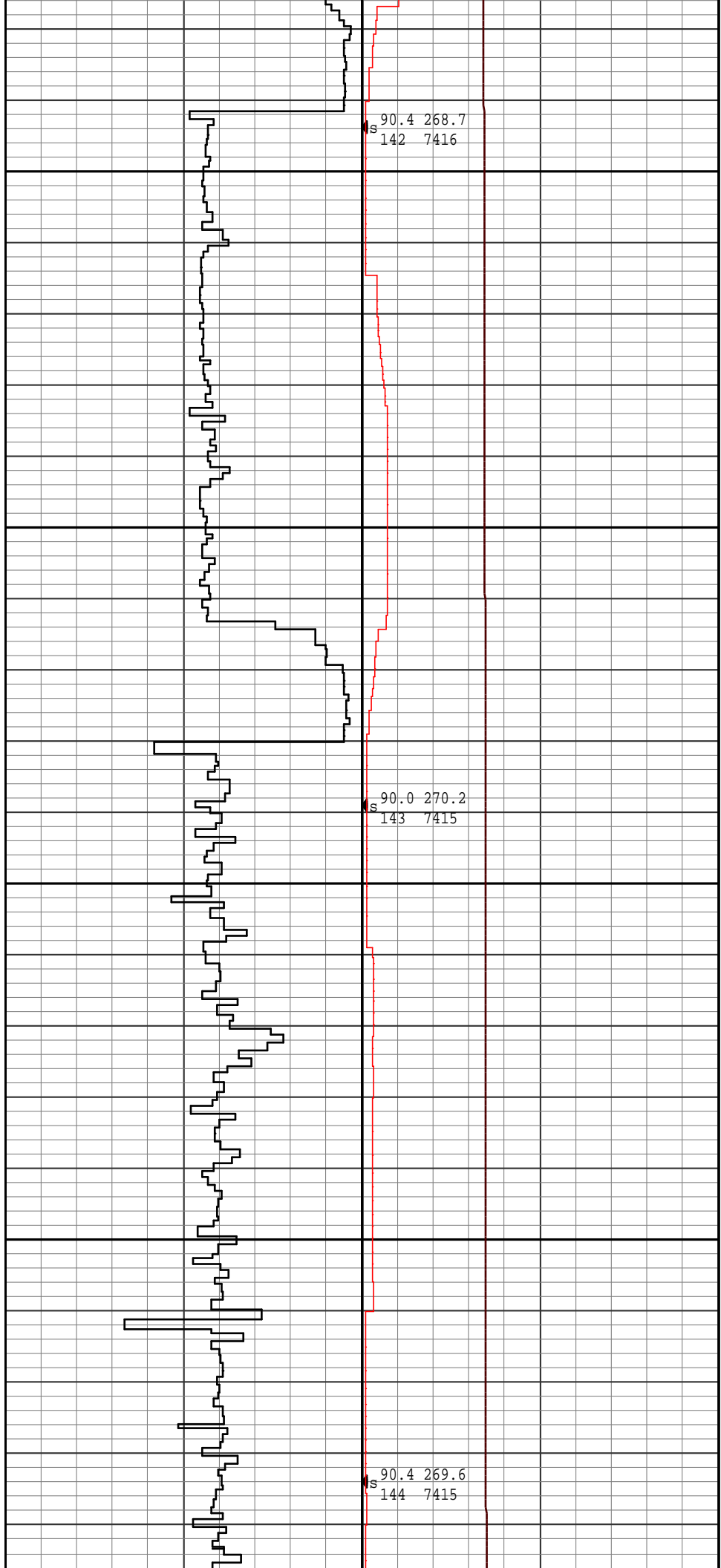
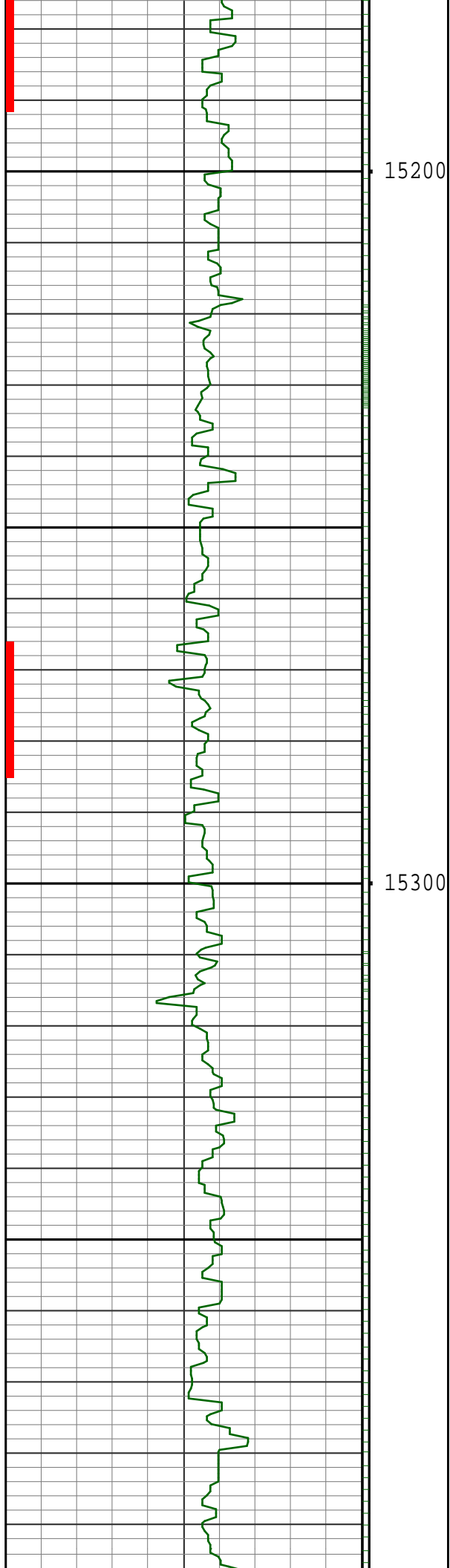
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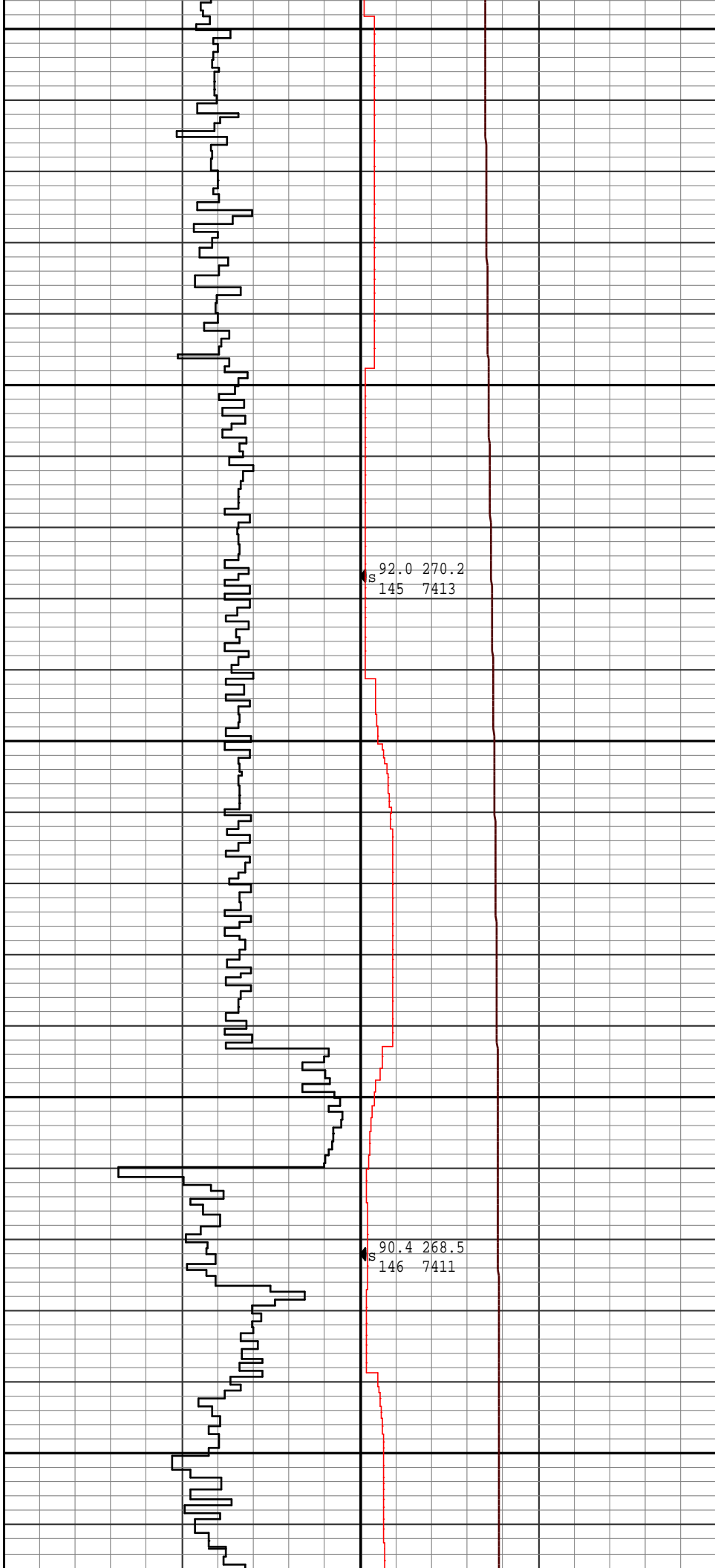
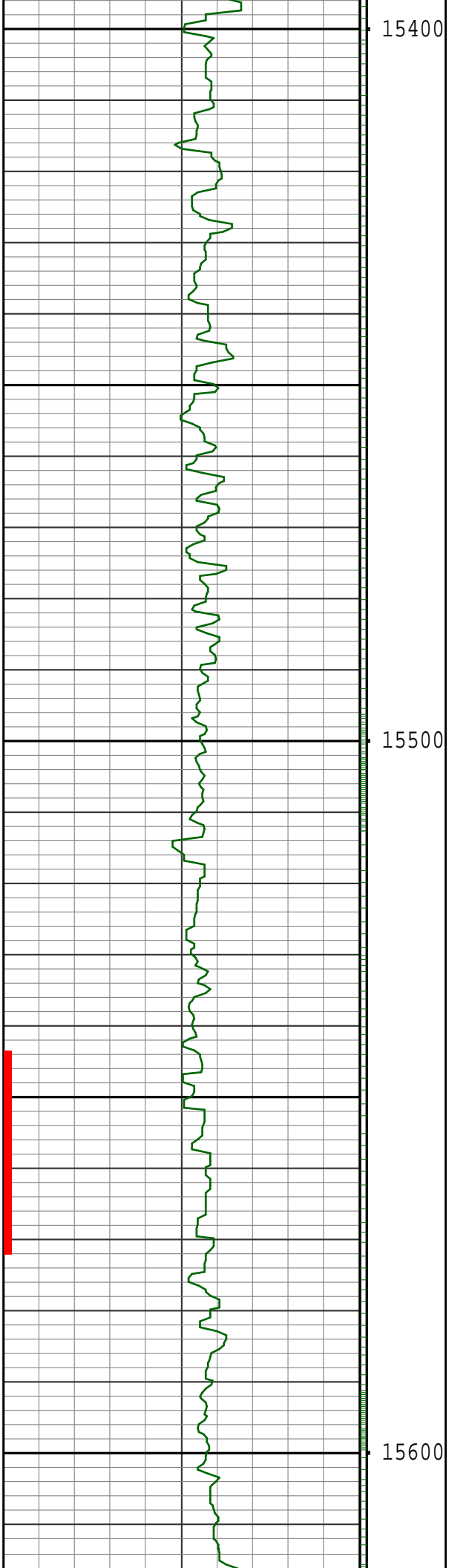




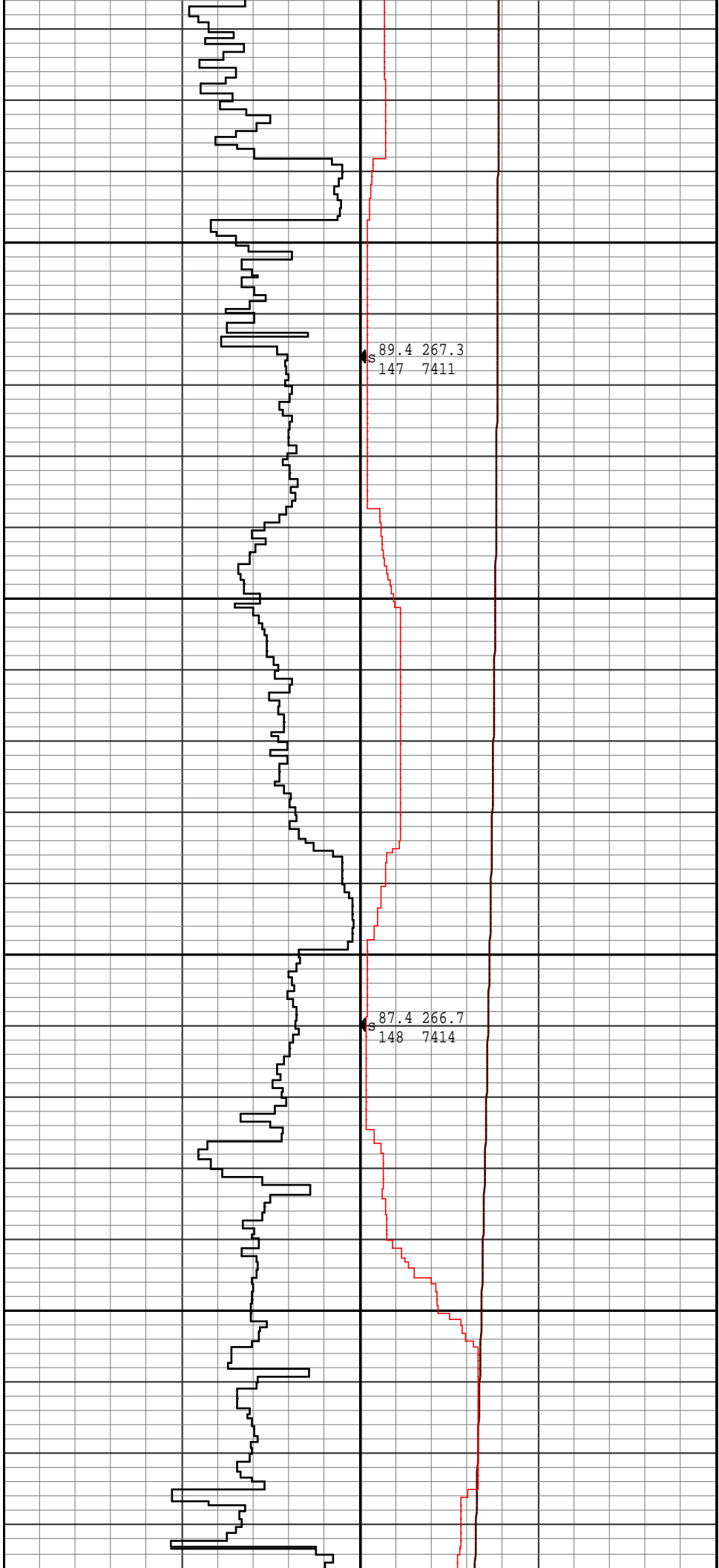
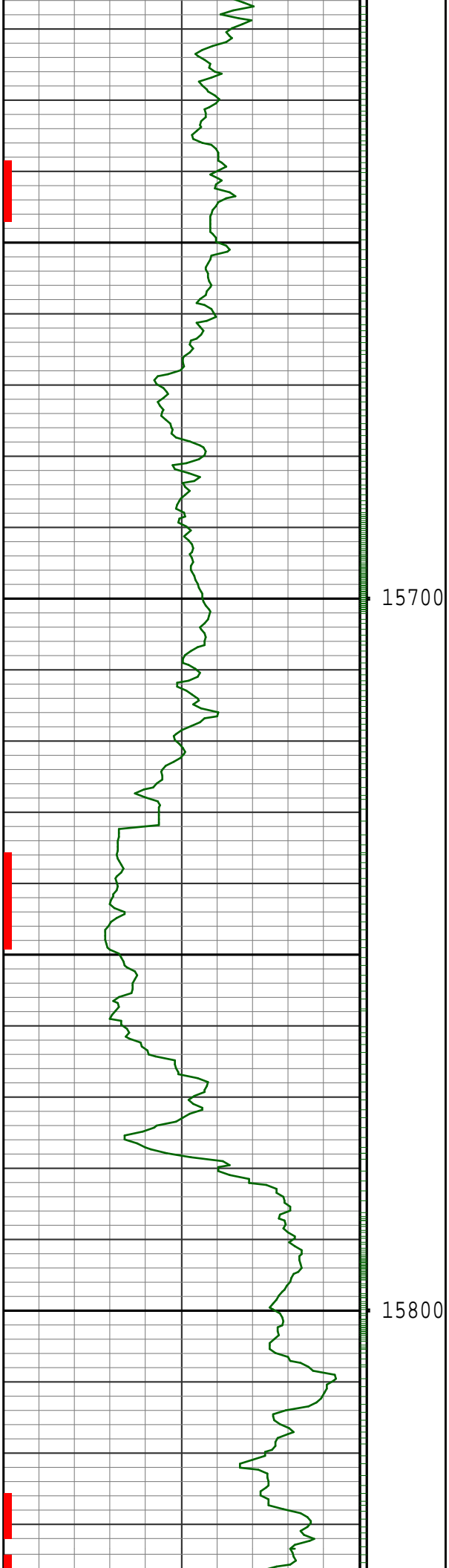


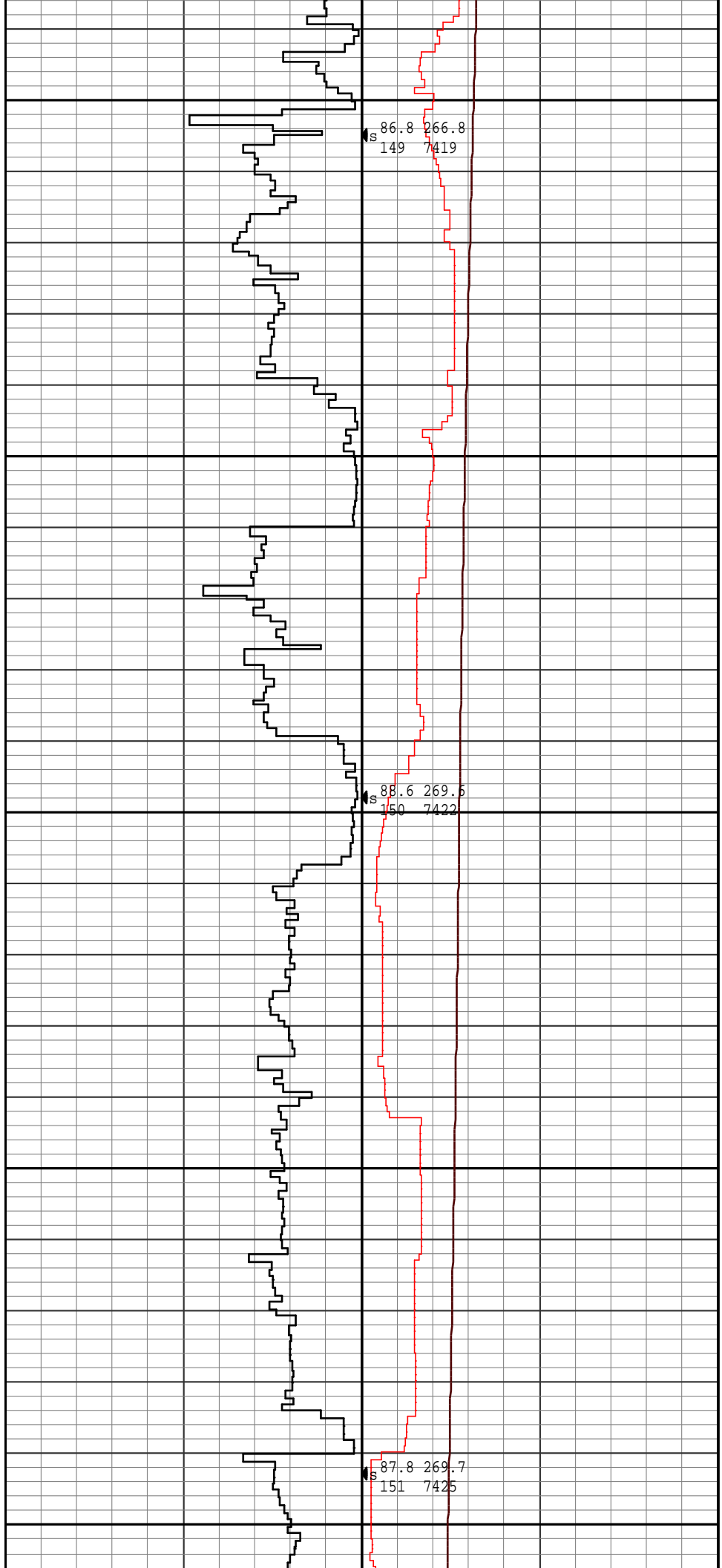
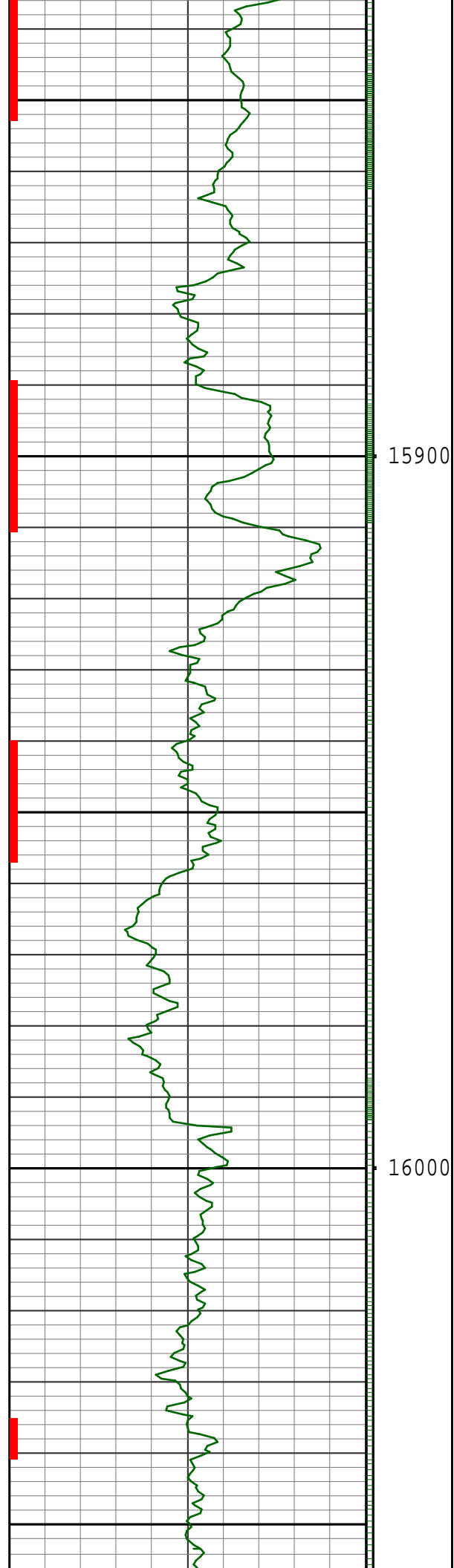


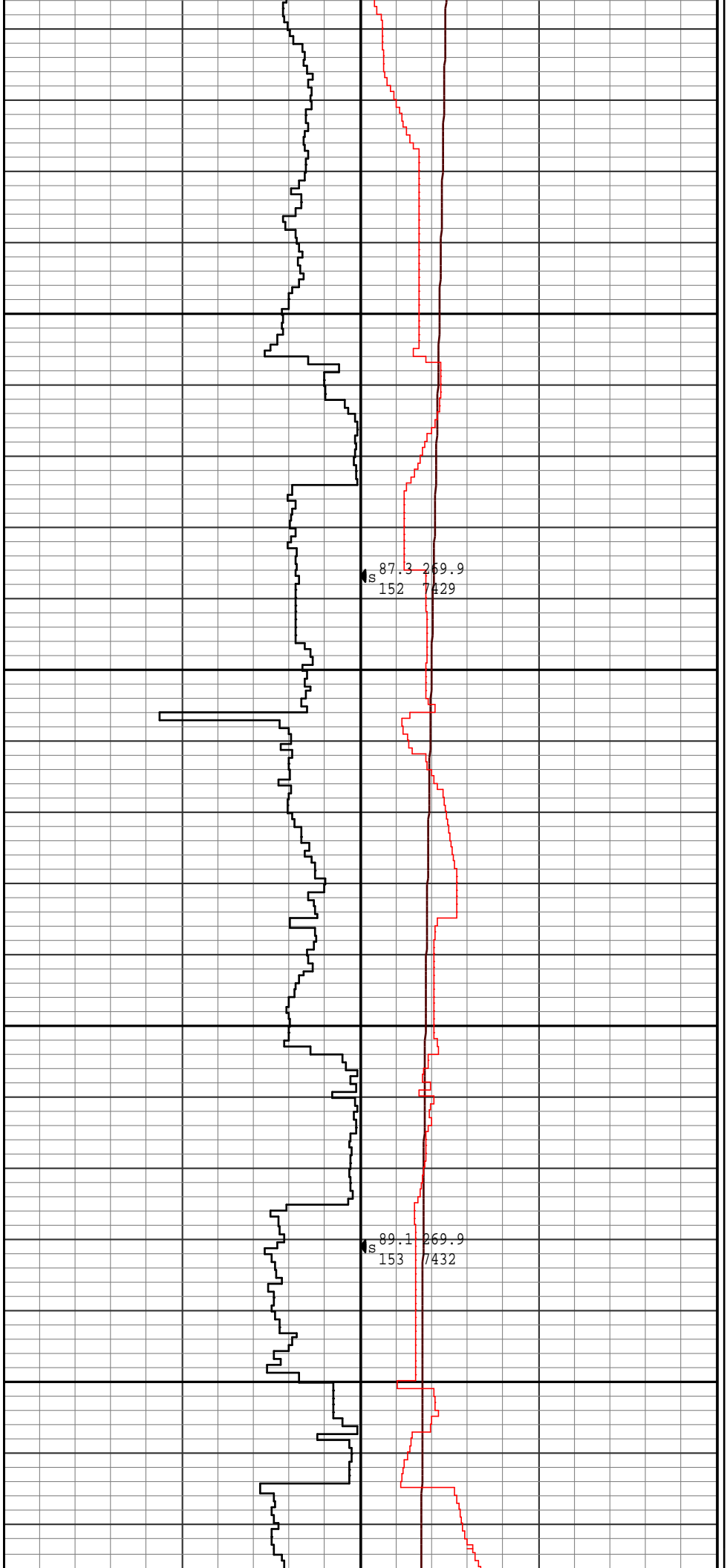
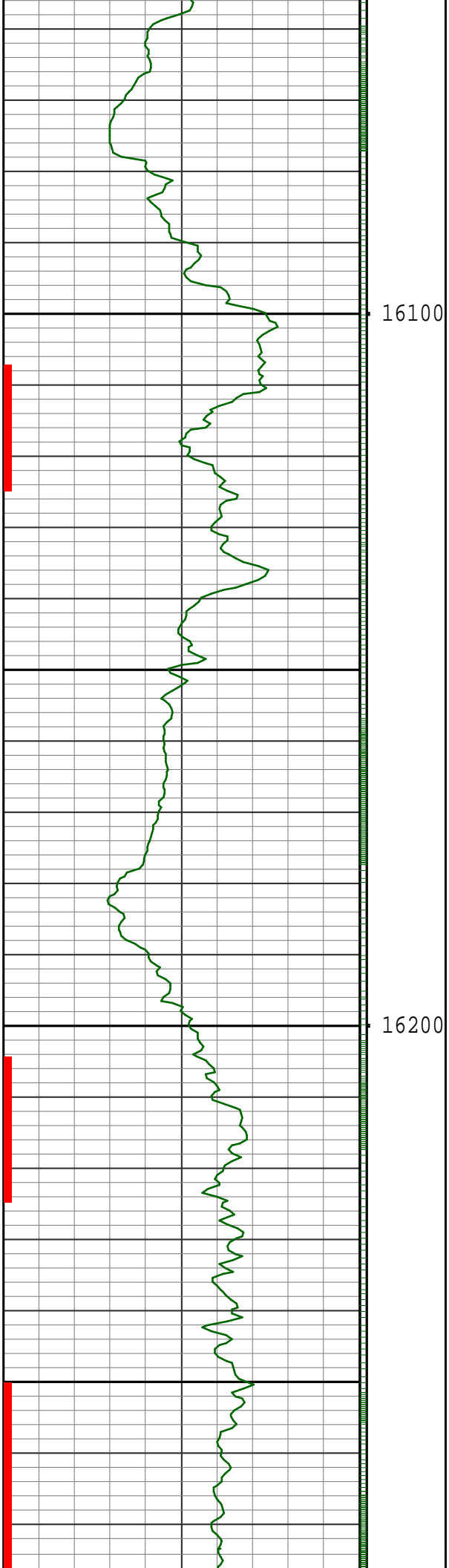


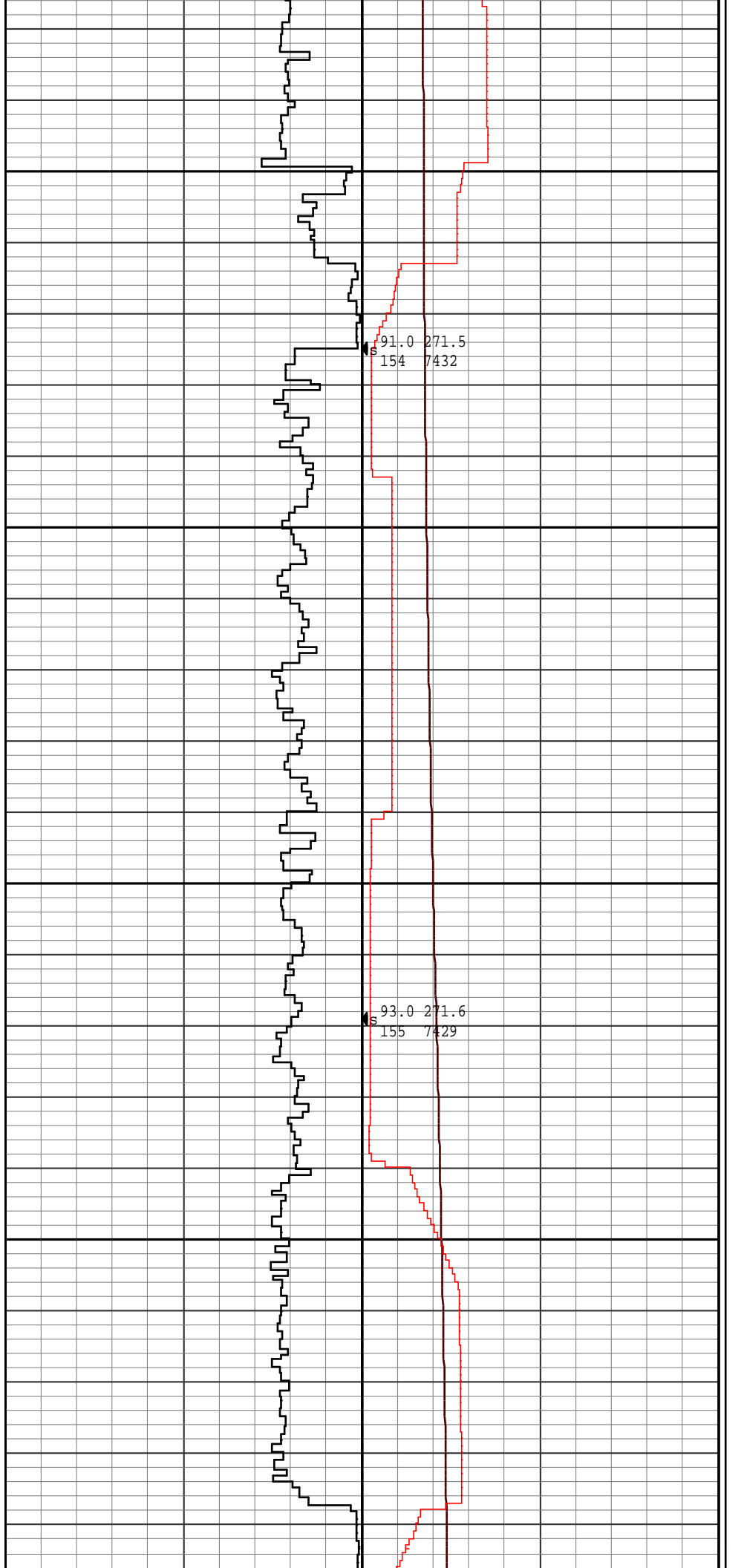
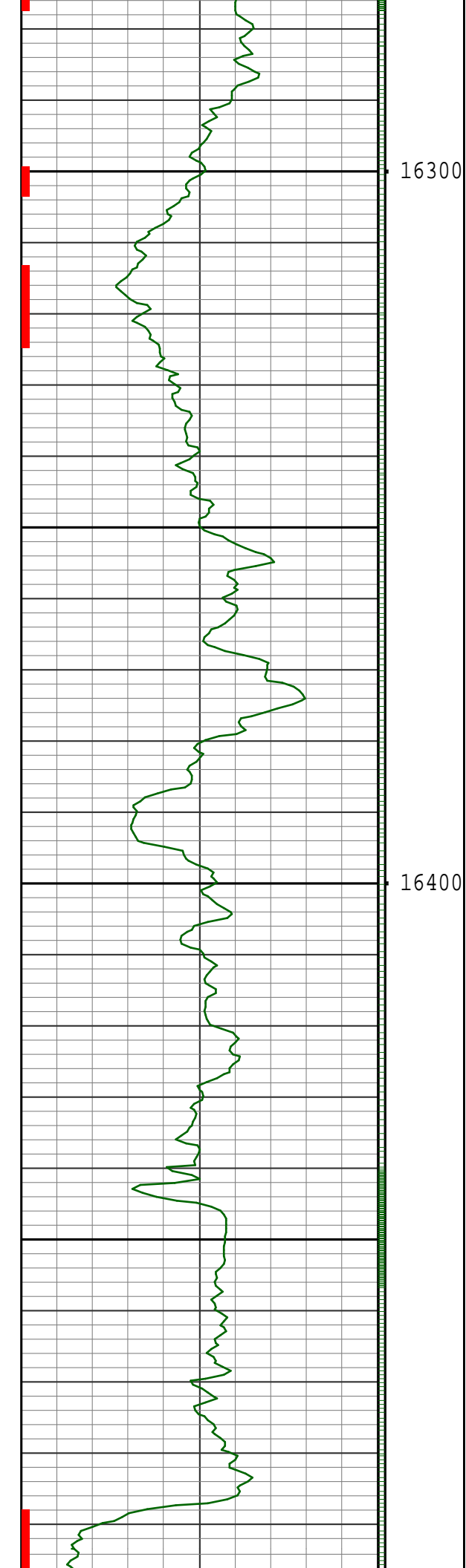


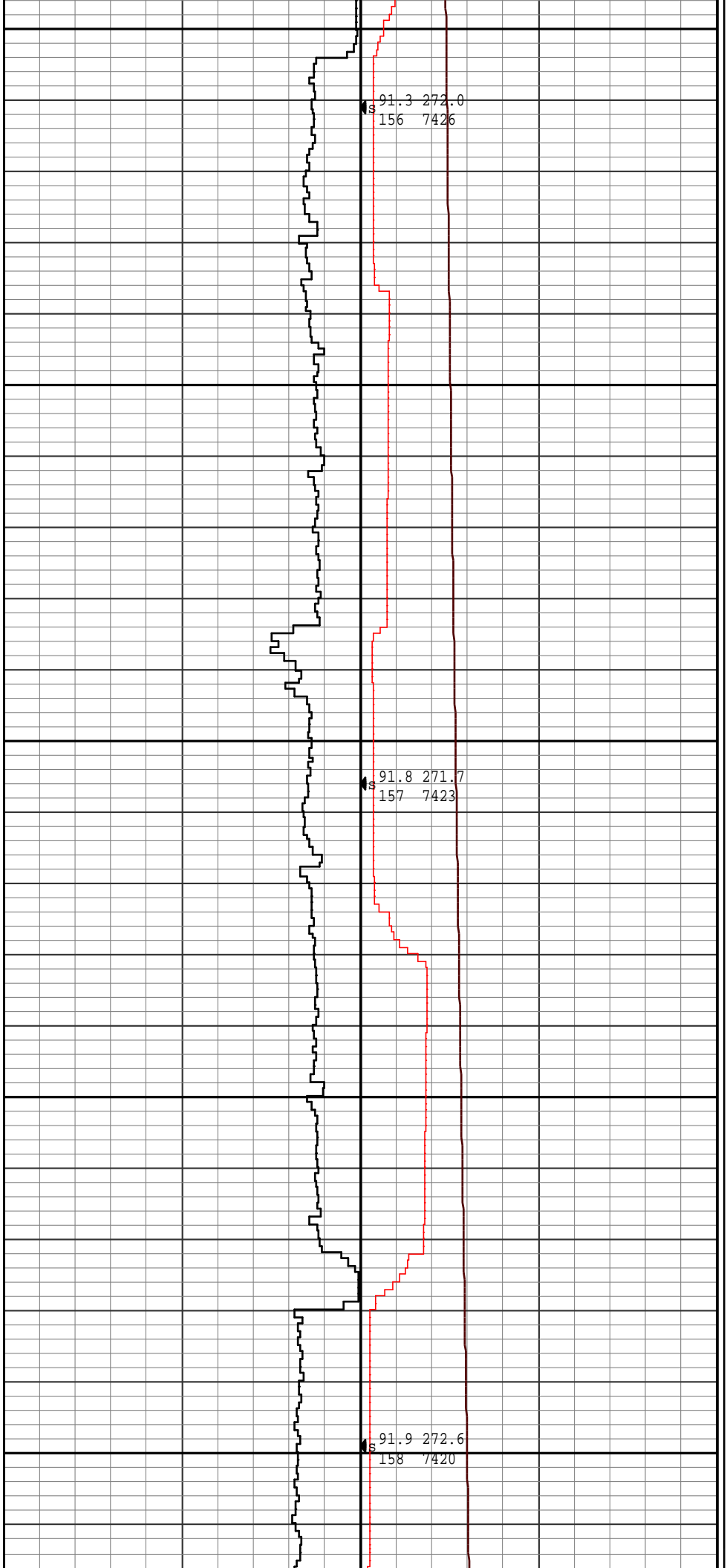
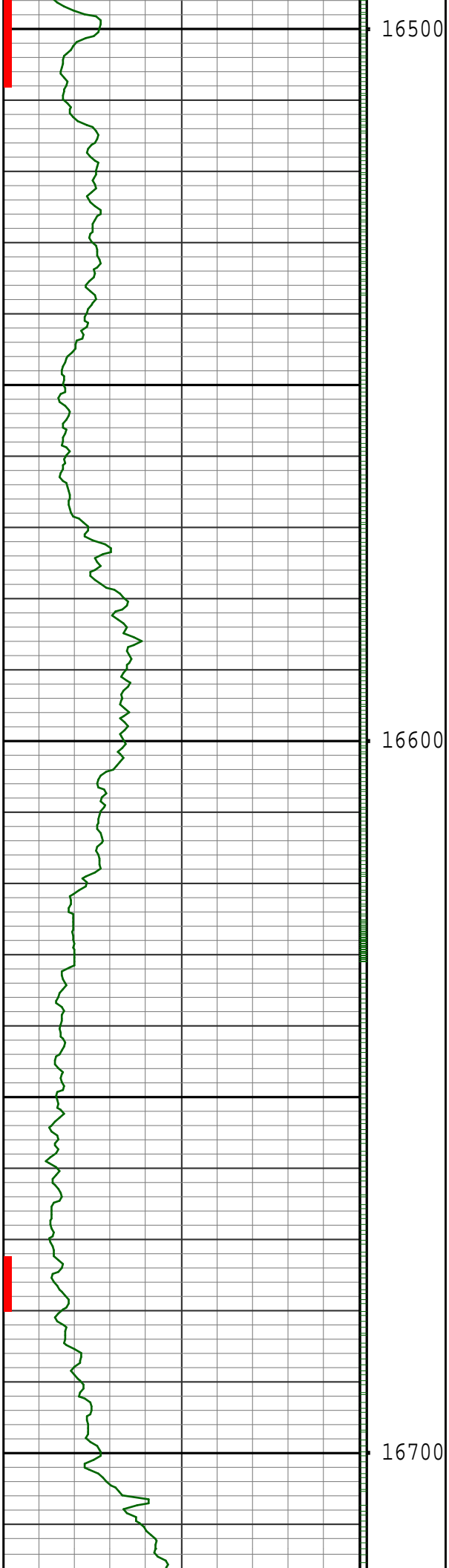


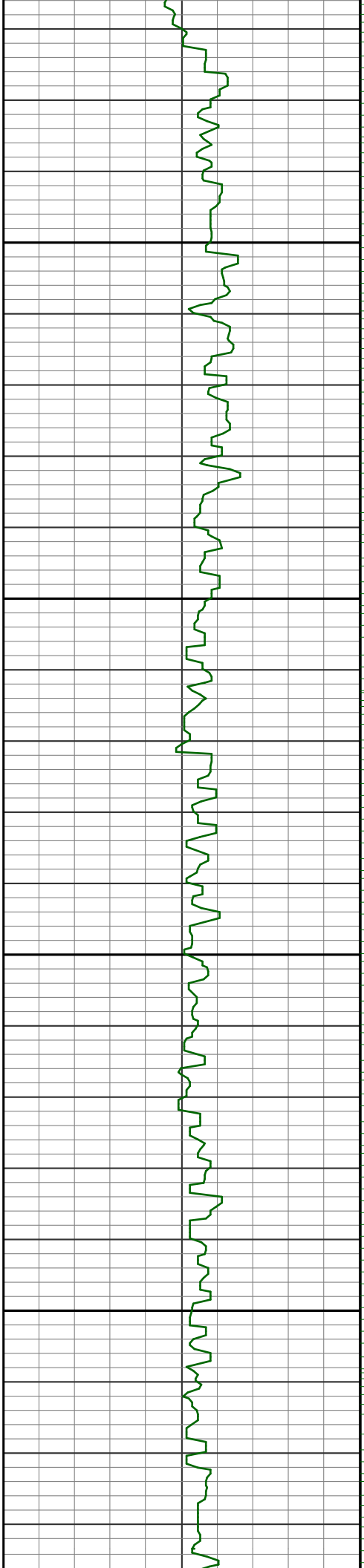






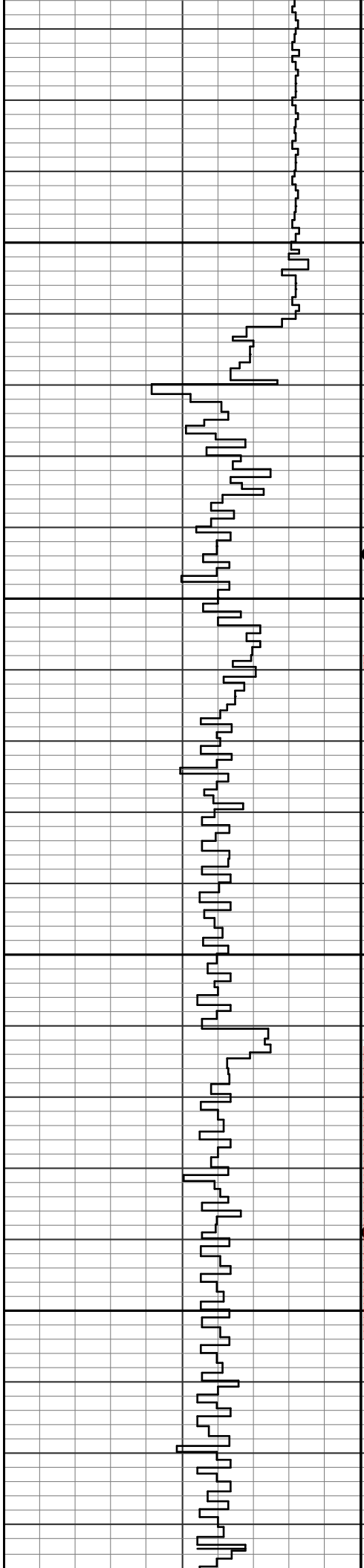






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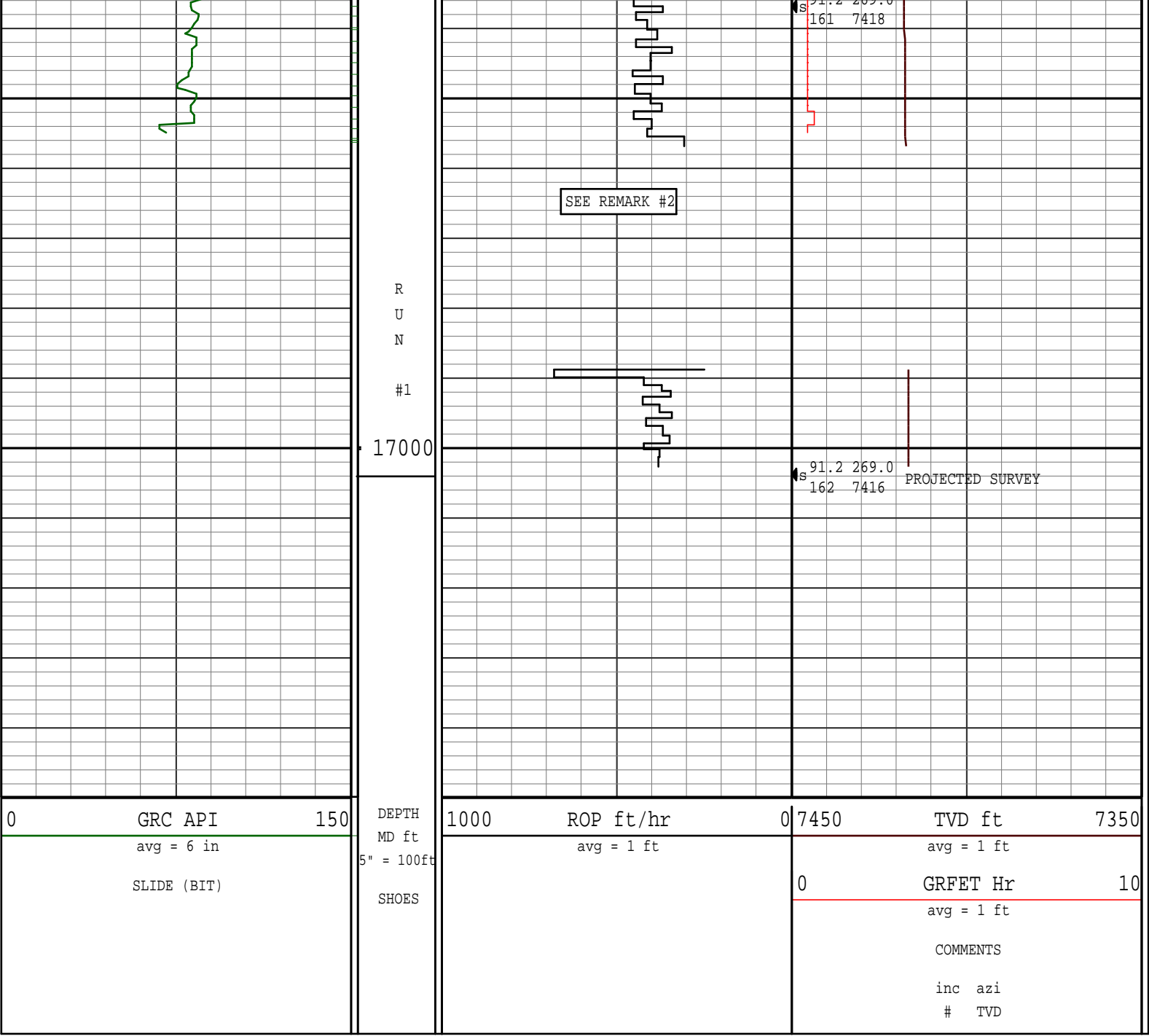
16900



S 90.0 270.0  
159 7418

S 90.2 269.2  
160 7418

91.2 269.0



Survey Report

Vertical Section Plane: 270.02°	Total Correction: 8.38° East to True
Calculation Method: Minimum Curvature	Survey Reference: Wellhead
North Aligned to: True North	Well: WILSON RANCH #33C-27HZ
RT: 20' ROTARY TABLE TO GROUND LEVEL	FIELD: WATTENBERG

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)
THE FOLLOWING ARE THIRD PARTY SURVEYS.											
10.00	0.00	0.00	10.00	0.00	0.00	0.00 N	0.00 W	0.01	321.00	0.00	
96.00	0.77	330.30	96.00	86.00	0.29	0.51 N	0.29 W	0.58	330.20	0.90	
187.00	0.37	262.63	186.99	91.00	0.88	1.00 N	0.88 W	1.34	318.51	0.79	
276.00	0.73	359.51	275.99	89.00	1.18	1.53 N	1.17 W	1.93	322.50	0.96	
382.00	1.59	348.77	381.97	106.00	1.47	3.65 N	1.47 W	3.93	338.10	0.83	
472.00	2.31	6.69	471.91	90.00	1.50	6.67 N	1.50 W	6.84	347.35	1.04	
562.00	3.56	10.08	561.79	90.00	0.80	11.23 N	0.80 W	11.26	355.93	1.40	
652.00	4.49	9.06	651.57	90.00	-0.24	17.46 N	0.25 E	17.46	0.81	1.04	
742.00	4.80	10.83	741.28	90.00	-1.50	24.63 N	1.51 E	24.68	3.50	0.38	
832.00	4.99	9.64	830.95	90.00	-2.86	32.19 N	2.87 E	32.32	5.10	0.24	
922.00	5.06	8.43	920.60	90.00	-4.09	39.98 N	4.11 E	40.19	5.87	0.14	
1012.00	5.24	7.10	1010.24	90.00	-5.18	47.98 N	5.20 E	48.26	6.18	0.24	
1103.00	5.30	5.76	1100.85	91.00	-6.11	56.29 N	6.13 E	56.62	6.22	0.15	
1193.00	5.30	5.00	1188.47	90.00	-5.18	64.66 N	5.18 E	64.85	6.22	0.23	

1193.00	5.32	7.81	1190.47	90.00	-7.10	64.56 N	7.12 E	64.95	6.29	0.21	
1283.00	5.70	9.68	1280.05	90.00	-8.41	73.10 N	8.44 E	73.58	6.58	0.47	
1373.00	5.14	9.78	1369.65	90.00	-9.84	81.47 N	9.87 E	82.07	6.91	0.62	
1463.00	4.68	8.22	1459.32	90.00	-11.05	89.08 N	11.08 E	89.77	7.09	0.53	
1553.00	4.22	8.74	1549.05	90.00	-12.08	95.99 N	12.11 E	96.75	7.19	0.51	
1643.00	4.47	2.76	1638.79	90.00	-12.75	102.76 N	12.78 E	103.56	7.09	0.57	
1733.00	4.63	5.57	1728.50	90.00	-13.27	109.88 N	13.30 E	110.68	6.90	0.31	
TIED-IN TO THIRD PARTY SURVEYS AT 1799'MD.											
1799.00	4.40	3.57	1794.30		-13.68	115.06 N	13.72 E	115.88	6.80		
THE FOLLOWING ARE SCHLUMBERGER TELEPACER MWD SURVEYS.											
1932.00	3.69	358.71	1926.97	133.00	-13.90	124.43 N	13.94 E	125.21	6.39	0.59	90.18
2026.00	3.45	355.19	2020.79	94.00	-13.59	130.27 N	13.64 E	130.98	5.98	0.35	90.18
2120.00	4.85	8.91	2114.54	94.00	-13.97	137.02 N	14.01 E	137.73	5.84	1.82	93.80
2214.00	4.97	0.93	2208.20	94.00	-14.65	145.02 N	14.70 E	145.76	5.79	0.74	97.41
2307.00	4.83	357.73	2300.86	93.00	-14.55	152.96 N	14.61 E	153.65	5.45	0.33	97.41
2401.00	4.72	8.88	2394.53	94.00	-14.99	160.73 N	15.05 E	161.43	5.35	0.99	97.41
2495.00	4.70	6.58	2488.21	94.00	-16.03	168.38 N	16.08 E	169.14	5.46	0.20	97.41
2588.00	4.98	5.45	2580.88	93.00	-16.84	176.18 N	16.90 E	176.99	5.48	0.32	101.02
2683.00	5.04	4.06	2675.52	95.00	-17.53	184.45 N	17.59 E	185.29	5.45	0.14	101.02
2777.00	5.07	3.54	2769.15	94.00	-18.07	192.71 N	18.14 E	193.56	5.38	0.06	101.02
2869.00	4.91	13.41	2860.81	92.00	-19.23	200.60 N	19.30 E	201.53	5.50	0.95	104.64
2962.00	5.13	11.37	2953.45	93.00	-20.97	208.55 N	21.05 E	209.61	5.76	0.30	104.64
3054.00	4.11	17.44	3045.15	92.00	-22.77	215.73 N	22.85 E	216.93	6.05	1.23	104.64
3147.00	3.75	13.55	3137.93	93.00	-24.48	221.86 N	24.56 E	223.22	6.32	0.48	108.25
3239.00	3.92	21.02	3229.73	92.00	-26.31	227.72 N	26.39 E	229.25	6.61	0.57	108.25
3332.00	4.88	20.86	3322.45	93.00	-28.86	234.39 N	28.94 E	236.17	7.04	1.03	108.25
3424.00	4.20	18.89	3414.16	92.00	-31.34	241.23 N	31.42 E	243.27	7.42	0.76	108.25
3517.00	4.40	15.90	3506.90	93.00	-33.42	247.88 N	33.50 E	250.14	7.70	0.32	111.87
3610.00	4.92	17.63	3599.59	93.00	-35.60	255.12 N	35.69 E	257.60	7.96	0.58	111.87
3704.00	5.80	24.26	3693.18	94.00	-38.77	263.29 N	38.86 E	266.14	8.40	1.14	111.87
3798.00	5.75	25.89	3786.70	94.00	-42.77	271.85 N	42.87 E	275.21	8.96	0.18	111.87
3890.00	5.59	25.31	3878.25	92.00	-46.70	280.05 N	46.80 E	283.93	9.49	0.19	115.48
3985.00	5.38	26.39	3972.82	95.00	-50.65	288.22 N	50.75 E	292.66	9.99	0.25	115.48
4079.00	4.70	12.36	4066.46	94.00	-53.43	295.93 N	53.54 E	300.74	10.25	1.49	115.48
4173.00	3.67	8.50	4160.21	94.00	-54.70	302.67 N	54.81 E	307.59	10.26	1.14	119.09
4267.00	4.37	18.54	4253.98	94.00	-56.28	309.04 N	56.39 E	314.14	10.34	1.05	119.09
4359.00	4.82	20.93	4345.68	92.00	-58.78	315.97 N	58.89 E	321.41	10.56	0.53	122.71
4452.00	5.84	18.52	4438.28	93.00	-61.67	324.11 N	61.78 E	329.95	10.79	1.12	122.71
4544.00	5.11	12.07	4529.86	92.00	-64.01	332.56 N	64.13 E	338.68	10.91	1.04	126.32
4637.00	5.10	8.63	4622.49	93.00	-65.50	340.69 N	65.61 E	346.95	10.90	0.33	126.32
4729.00	4.05	5.52	4714.20	92.00	-66.42	347.97 N	66.54 E	354.27	10.83	1.17	129.94
4822.00	5.07	2.58	4806.90	93.00	-66.92	355.34 N	67.04 E	361.61	10.68	1.12	129.94
4914.00	6.36	4.43	4898.44	92.00	-67.49	364.49 N	67.62 E	370.70	10.51	1.42	129.94
5006.00	4.95	4.80	4989.99	92.00	-68.21	373.52 N	68.34 E	379.72	10.37	1.53	129.94
5098.00	3.64	2.70	5081.73	92.00	-68.68	380.39 N	68.81 E	386.57	10.25	1.43	133.55
5191.00	4.20	5.80	5174.51	93.00	-69.16	386.73 N	69.30 E	392.89	10.16	0.64	133.55
5283.00	4.39	12.28	5266.25	92.00	-70.25	393.52 N	70.39 E	399.77	10.14	0.57	133.55
5375.00	3.26	12.73	5358.05	92.00	-71.57	399.52 N	71.71 E	405.90	10.18	1.23	137.17
5468.00	2.36	7.89	5450.94	93.00	-72.42	403.99 N	72.56 E	410.46	10.18	1.00	137.17
5560.00	1.22	9.38	5542.89	92.00	-72.83	406.83 N	72.98 E	413.33	10.17	1.24	140.78
5746.00	0.68	0.83	5728.86	186.00	-73.17	409.89 N	73.32 E	416.40	10.14	0.30	140.78
5839.00	0.48	356.74	5821.86	93.00	-73.16	410.83 N	73.30 E	417.32	10.12	0.22	144.39
5933.00	1.45	353.13	5915.84	94.00	-72.99	412.41 N	73.14 E	418.84	10.06	1.03	144.39
6028.00	1.01	351.88	6010.82	95.00	-72.73	414.43 N	72.87 E	420.79	9.97	0.46	144.39
6120.00	0.63	326.80	6102.81	92.00	-72.34	415.65 N	72.48 E	421.93	9.89	0.56	144.39
6214.00	0.51	306.31	6196.81	94.00	-71.72	416.33 N	71.86 E	422.49	9.79	0.25	148.01
6309.00	0.91	358.89	6291.80	95.00	-71.36	417.34 N	71.51 E	423.42	9.72	0.76	144.39

Survey Report											
Vertical Section Plane: 270.02°						Total Correction: 8.38° East to True					
Calculation Method: Minimum Curvature						Survey Reference: Wellhead					
North Aligned to: True North						Well: WILSON RANCH #33C-27HZ					
RT: 20' ROTARY TABLE TO GROUND LEVEL						FIELD: WATTENBERG					
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)
6404.00	0.80	13.35	6386.79	95.00	-71.50	418.74 N	71.65 E	424.82	9.71	0.25	148.01
6497.00	0.53	4.81	6479.78	93.00	-71.69	419.80 N	71.83 E	425.90	9.71	0.31	151.62
6589.00	0.33	319.31	6571.78	92.00	-71.55	420.42 N	71.69 E	426.49	9.68	0.41	151.62
6682.00	0.50	304.64	6664.78	93.00	-71.04	420.86 N	71.19 E	426.84	9.60	0.21	151.62
6774.00	0.73	282.99	6756.77	92.00	-70.14	421.22 N	70.29 E	427.04	9.47	0.35	151.62
6868.00	8.53	272.04	6850.40	94.00	-62.58	421.60 N	62.72 E	426.24	8.46	8.31	151.62
6962.00	14.06	272.51	6942.54	94.00	-44.19	422.35 N	44.33 E	424.67	5.99	5.88	155.24
7054.00	21.38	268.16	7030.12	92.00	-16.22	422.30 N	16.37 E	422.62	2.22	8.08	155.24
7148.00	28.02	268.59	7115.47	94.00	23.02	421.21 N	22.87 W	421.83	356.89	7.07	158.85
7241.00	35.97	272.43	7194.29	93.00	72.23	421.83 N	72.08 W	427.94	350.30	8.82	158.85
7336.00	47.33	272.74	7265.16	95.00	135.20	424.69 N	135.05 W	445.64	342.36	11.96	158.85
7430.00	56.16	271.77	7323.30	94.00	208.88	427.55 N	208.73 W	475.78	333.98	9.43	158.85
7526.00	64.81	272.45	7370.55	96.00	292.29	430.65 N	292.14 W	520.39	325.85	9.03	158.85
7620.00	73.84	271.11	7403.71	94.00	380.10	433.35 N	379.95 W	576.32	318.76	9.70	158.85
7715.00	80.97	271.52	7424.41	95.00	472.73	435.48 N	472.58 W	642.63	312.66	7.52	158.85
7808.00	88.91	272.08	7432.61	93.00	565.25	438.39 N	565.10 W	715.20	307.80	8.56	162.46
7902.00	90.43	272.21	7433.15	94.00	659.18	441.90 N	659.02 W	793.47	303.84	1.62	166.08
7997.00	90.42	272.22	7432.44	95.00	754.10	445.66 N	753.95 W	875.81	299.59	0.12	169.69



7997.00	90.42	272.32	7432.44	95.00	754.10	449.80 N	733.93 W	875.81	500.39	0.12	109.69
8092.00	91.49	273.19	7430.86	95.00	848.98	450.22 N	848.82 W	960.83	297.94	1.45	169.69
8186.00	91.06	271.53	7428.77	94.00	942.87	454.09 N	942.72 W	1046.38	295.72	1.82	173.31
8281.00	90.61	269.73	7427.38	95.00	1037.86	455.14 N	1037.70 W	1133.12	293.68	1.95	173.30
8375.00	91.34	269.35	7425.78	94.00	1131.84	454.38 N	1131.68 W	1219.49	291.88	0.87	176.92
8468.00	92.41	269.74	7422.74	93.00	1224.78	453.65 N	1224.62 W	1305.95	290.33	1.22	176.92
8562.00	90.62	269.39	7420.26	94.00	1318.74	452.93 N	1318.58 W	1394.21	288.96	1.94	176.92
8656.00	91.90	269.82	7418.19	94.00	1412.72	452.28 N	1412.56 W	1483.20	287.75	1.44	180.54
8747.00	90.61	268.96	7416.20	91.00	1503.69	451.31 N	1503.53 W	1569.80	286.71	1.70	180.54
8840.00	89.94	267.97	7415.75	93.00	1596.65	448.82 N	1596.49 W	1658.38	285.70	1.29	180.54
8932.00	91.23	267.74	7414.81	92.00	1688.58	445.38 N	1688.42 W	1746.18	284.78	1.43	180.54
9025.00	88.99	266.81	7414.63	93.00	1781.46	440.96 N	1781.31 W	1835.08	283.90	2.61	184.15
9118.00	88.88	268.28	7416.36	93.00	1874.36	436.98 N	1874.20 W	1924.47	283.12	1.58	184.15
9211.00	88.88	268.84	7418.18	93.00	1967.31	434.64 N	1967.16 W	2014.60	282.46	0.60	184.15
9303.00	89.33	268.72	7419.61	92.00	2059.28	432.68 N	2059.12 W	2104.09	281.87	0.51	187.76
9396.00	89.33	268.33	7420.70	93.00	2152.24	430.29 N	2152.09 W	2194.68	281.31	0.42	187.76
9489.00	89.89	268.81	7421.33	93.00	2245.20	427.97 N	2245.06 W	2285.48	280.79	0.79	187.76
9584.00	90.95	268.83	7420.64	95.00	2340.18	426.01 N	2340.03 W	2378.49	280.32	1.12	191.38
9678.00	91.96	269.41	7418.25	94.00	2434.14	424.57 N	2433.99 W	2470.74	279.89	1.24	191.38
9773.00	89.49	268.85	7417.05	95.00	2529.11	423.12 N	2528.96 W	2564.11	279.50	2.67	191.38
9867.00	89.83	268.54	7417.61	94.00	2623.08	420.98 N	2622.94 W	2656.51	279.12	0.49	194.99
9961.00	89.21	270.19	7418.40	94.00	2717.07	419.94 N	2716.92 W	2749.19	278.79	1.88	194.99
10055.00	89.32	269.67	7419.60	94.00	2811.06	419.83 N	2810.91 W	2842.09	278.49	0.57	198.61
10149.00	89.94	271.00	7420.21	94.00	2905.06	420.38 N	2904.91 W	2935.17	278.23	1.56	198.61
10242.00	90.16	269.62	7420.13	93.00	2998.05	420.88 N	2997.91 W	3027.30	277.99	1.50	198.61
10336.00	90.33	268.14	7419.73	94.00	3092.03	419.04 N	3091.88 W	3120.15	277.72	1.58	202.22
10430.00	88.99	269.23	7420.28	94.00	3186.00	416.89 N	3185.85 W	3213.01	277.46	1.84	202.22
10524.00	89.99	270.45	7421.12	94.00	3279.99	416.62 N	3279.85 W	3306.20	277.24	1.68	202.22
10618.00	89.49	271.18	7421.55	94.00	3373.98	417.96 N	3373.84 W	3399.63	277.06	0.94	202.22
10712.00	90.33	271.52	7421.69	94.00	3467.95	420.18 N	3467.81 W	3493.17	276.91	0.96	205.83
10805.00	91.96	272.83	7419.84	93.00	3560.87	423.70 N	3560.72 W	3585.84	276.79	2.25	205.83
10899.00	89.94	271.53	7418.28	94.00	3654.78	427.28 N	3654.63 W	3679.52	276.67	2.55	205.83
10993.00	90.72	272.31	7417.74	94.00	3748.72	430.43 N	3748.57 W	3773.20	276.55	1.17	209.45
11087.00	89.88	272.76	7417.24	94.00	3842.63	434.58 N	3842.48 W	3866.98	276.45	1.01	205.83
11181.00	91.23	273.35	7416.33	94.00	3936.49	439.59 N	3936.34 W	3960.81	276.37	1.57	209.45
11274.00	90.08	273.32	7415.27	93.00	4029.33	445.00 N	4029.17 W	4053.67	276.30	1.24	209.45
11368.00	88.29	272.94	7416.61	94.00	4123.18	450.14 N	4123.02 W	4147.52	276.23	1.95	209.45
11463.00	89.07	271.90	7418.80	95.00	4218.07	454.15 N	4217.91 W	4242.29	276.15	1.37	209.45
11557.00	89.75	270.36	7419.76	94.00	4312.04	456.00 N	4311.88 W	4335.93	276.04	1.79	209.45
11651.00	89.58	268.91	7420.31	94.00	4406.03	455.40 N	4405.88 W	4429.35	275.90	1.55	209.45
11745.00	88.40	267.69	7421.97	94.00	4499.97	452.61 N	4499.82 W	4522.52	275.74	1.81	205.83
11837.00	88.46	266.73	7424.49	92.00	4591.83	448.14 N	4591.67 W	4613.49	275.57	1.04	209.45
11930.00	88.85	267.94	7426.67	93.00	4684.70	443.81 N	4684.54 W	4705.52	275.41	1.37	209.45
12022.00	87.67	266.73	7429.47	92.00	4776.55	439.54 N	4776.40 W	4796.58	275.26	1.84	209.45
12115.00	89.07	267.83	7432.11	93.00	4869.40	435.13 N	4869.25 W	4888.66	275.11	1.91	209.45
12207.00	90.03	268.81	7432.83	92.00	4961.36	432.43 N	4961.21 W	4980.02	274.98	1.49	209.45
12301.00	90.98	270.66	7432.01	94.00	5055.35	432.00 N	5055.20 W	5073.62	274.88	2.21	213.06
12394.00	90.87	270.29	7430.51	93.00	5148.33	432.77 N	5148.18 W	5166.34	274.81	0.42	213.06
12488.00	91.59	271.07	7428.49	94.00	5242.30	433.88 N	5242.15 W	5260.08	274.73	1.13	213.06
12580.00	91.65	270.61	7425.89	92.00	5334.26	435.23 N	5334.11 W	5351.83	274.66	0.50	216.68
12673.00	90.08	270.68	7424.48	93.00	5427.24	436.28 N	5427.09 W	5444.59	274.60	1.69	213.06
12765.00	91.03	272.11	7423.59	92.00	5519.20	438.52 N	5519.05 W	5536.44	274.54	1.87	216.68
12858.00	89.80	271.78	7422.92	93.00	5612.15	441.67 N	5611.99 W	5629.35	274.50	1.37	216.68
12951.00	90.36	272.56	7422.79	93.00	5705.08	445.19 N	5704.93 W	5722.27	274.46	1.03	216.68

Survey Report											
Vertical Section Plane: 270.02°						Total Correction: 8.38° East to True					
Calculation Method: Minimum Curvature						Survey Reference: Wellhead					
North Aligned to: True North						Well: WILSON RANCH #33C-27HZ					
RT: 20' ROTARY TABLE TO GROUND LEVEL						FIELD: WATTENBERG					
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)
13043.00	90.98	273.21	7421.71	92.00	5796.96	449.82 N	5796.80 W	5814.23	274.44	0.98	220.29
13136.00	90.64	272.19	7420.40	93.00	5889.85	454.20 N	5889.69 W	5907.18	274.41	1.16	220.29
13229.00	90.87	270.90	7419.17	93.00	5982.80	456.71 N	5982.64 W	6000.05	274.37	1.41	220.29
13321.00	89.63	269.92	7418.77	92.00	6074.80	457.37 N	6074.64 W	6091.83	274.31	1.72	220.29
13415.00	89.97	270.12	7419.10	94.00	6168.80	457.40 N	6168.64 W	6185.57	274.24	0.42	220.29
13508.00	90.19	270.10	7418.97	93.00	6261.80	457.58 N	6261.64 W	6278.33	274.18	0.24	220.29
13602.00	90.53	270.30	7418.38	94.00	6355.79	457.91 N	6355.63 W	6372.11	274.12	0.42	223.91
13696.00	90.14	270.27	7417.83	94.00	6449.79	458.38 N	6449.63 W	6465.90	274.07	0.42	223.91
13789.00	89.52	270.17	7418.10	93.00	6542.79	458.73 N	6542.63 W	6558.69	274.01	0.68	223.91
13885.00	91.15	271.83	7417.54	96.00	6638.77	460.41 N	6638.61 W	6654.55	273.97	2.42	223.91
13980.00	90.70	270.57	7416.01	95.00	6733.73	462.40 N	6733.57 W	6749.43	273.93	1.41	220.29
14074.00	88.23	268.61	7416.89	94.00	6827.71	461.73 N	6827.55 W	6843.15	273.87	3.35	220.29
14168.00	88.46	268.44	7419.60	94.00	6921.64	459.31 N	6921.48 W	6936.70	273.80	0.30	223.91
14261.00	88.85	268.39	7421.79	93.00	7014.58	456.74 N	7014.42 W	7029.28	273.73	0.42	223.91
14353.00	88.79	267.38	7423.68	92.00	7106.50	453.34 N	7106.34 W	7120.78	273.65	1.10	223.91
14447.00	89.30	267.97	7425.25	94.00	7200.40	449.53 N	7200.25 W	7214.27	273.57	0.83	223.91
14542.00	90.25	269.25	7425.62	95.00	7295.37	447.22 N	7295.21 W	7308.91	273.51	1.68	223.91
14635.00	91.09	268.27	7424.53	93.00	7388.34	445.21 N	7388.18 W	7401.59	273.45	1.39	227.52
14727.00	91.76	268.51	7422.24	92.00	7480.27	442.63 N	7480.12 W	7493.20	273.39	0.77	227.52
14820.00	91.93	269.85	7419.25	93.00	7573.21	441.30 N	7573.06 W	7585.91	273.33	1.45	223.91
14912.00	90.98	268.75	7416.91	92.00	7665.17	440.17 N	7665.02 W	7677.65	273.29	1.58	227.52

15007.00	89.52	268.57	7416.50	95.00	7760.14	437.95 N	7759.99 W	7772.34	273.23	1.55	223.91
15101.00	90.53	268.00	7416.46	94.00	7854.10	435.14 N	7853.95 W	7865.99	273.17	1.23	227.52
15194.00	90.42	268.69	7415.69	93.00	7947.06	432.45 N	7946.91 W	7958.66	273.11	0.75	227.52
15289.00	89.97	270.16	7415.36	95.00	8042.05	431.50 N	8041.90 W	8053.46	273.07	1.62	227.52
15384.00	90.36	269.58	7415.09	95.00	8137.04	431.28 N	8136.89 W	8148.32	273.03	0.74	227.52
15477.00	91.99	270.18	7413.18	93.00	8230.02	431.09 N	8229.87 W	8241.15	273.00	1.87	227.52
15572.00	90.36	268.48	7411.23	95.00	8324.99	429.98 N	8324.84 W	8335.94	272.96	2.48	227.52
15666.00	89.41	267.34	7411.42	94.00	8418.92	426.55 N	8418.77 W	8429.57	272.90	1.58	227.52
15760.00	87.45	266.73	7414.00	94.00	8512.75	421.69 N	8512.61 W	8523.05	272.84	2.18	227.52
15855.00	86.83	266.75	7418.74	95.00	8607.48	416.29 N	8607.33 W	8617.40	272.77	0.65	223.91
15948.00	88.62	269.64	7422.43	93.00	8700.35	413.37 N	8700.20 W	8710.02	272.72	3.65	223.91
16043.00	87.79	269.70	7425.41	95.00	8795.30	412.82 N	8795.15 W	8804.84	272.69	0.88	227.52
16137.00	87.34	269.88	7429.40	94.00	8889.21	412.48 N	8889.07 W	8898.63	272.66	0.52	227.52
16231.00	89.07	269.86	7432.35	94.00	8983.16	412.26 N	8983.02 W	8992.47	272.63	1.84	227.52
16325.00	90.98	271.53	7432.30	94.00	9077.15	413.40 N	9077.00 W	9086.41	272.61	2.70	227.52
16419.00	92.99	271.56	7429.05	94.00	9171.05	415.94 N	9170.91 W	9180.33	272.60	2.14	227.52
16511.00	91.26	271.97	7425.64	92.00	9262.94	418.77 N	9262.80 W	9272.26	272.59	1.93	231.13
16606.00	91.82	271.69	7423.08	95.00	9357.86	421.80 N	9357.71 W	9367.21	272.58	0.66	231.13
16699.00	91.93	272.57	7420.04	93.00	9450.75	425.26 N	9450.60 W	9460.16	272.58	0.95	231.13
16794.00	89.97	270.04	7418.47	95.00	9545.70	427.42 N	9545.55 W	9555.11	272.56	3.37	231.13
16889.00	90.25	269.16	7418.28	95.00	9640.69	426.76 N	9640.54 W	9649.99	272.53	0.97	234.75
16937.00	91.15	269.02	7417.70	48.00	9688.68	425.99 N	9688.53 W	9697.89	272.52	1.90	231.13
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 17004'MD.											
17004.00	91.15	269.02	7416.35	67.00	9755.66	424.85 N	9755.51 W	9764.76	272.49	0.00	

EQUIPMENT DATA						
RUN NUMBER	1					
RES DTA						
RES MANDREL						
RES SIZE in						
RES VERIFIER						
API BLANKET						
HDS-1M DTA						
HDS-1M MANDREL						
HDS-1M SIZE in						
DNSC DTA						
DNSC MANDREL						
DNSC SIZE in						
DENSITY SOURCE NO.						
NEUTRON SOURCE NO.						
CLSS DTA						
CLSS MANDREL						
CLSS SIZE in						
DPM DTA	P67C606K					
DPM SIZE in	6 3/4					
DFT DTA						
DFT MANDREL						
DFT SIZE in						
PZIG UXM DTA						
PZIG LXM DTA						
PZIG SIZE in						

BOTTOM HOLE ASSEMBLY RECORD							
RUN #1 ft							
8 1/2" PDC BIT	0.70						
2.0° MOTOR	27.95						
7 3/4" STAB	6.78						
X/O	3.35						
DPM (PRESSURE)	4.62						

TELEPACER DIR/GR	29.37						
X/O	2.52						
NMDC	29.52						
NM FLEX DC	30.28						
FILTER SUB	2.83						
DP X 312	9702.80						
HWDP X 45	1407.51						
TOTAL BHA LENGTH	11248.2						
SENSOR OFFSETS:							
=====							
PRESSURE	35.47						
GAMMA-RAY	40.66						
DIRECTIONAL	57.24						

GAMMA-RAY



5" = 100'

FEET MD